

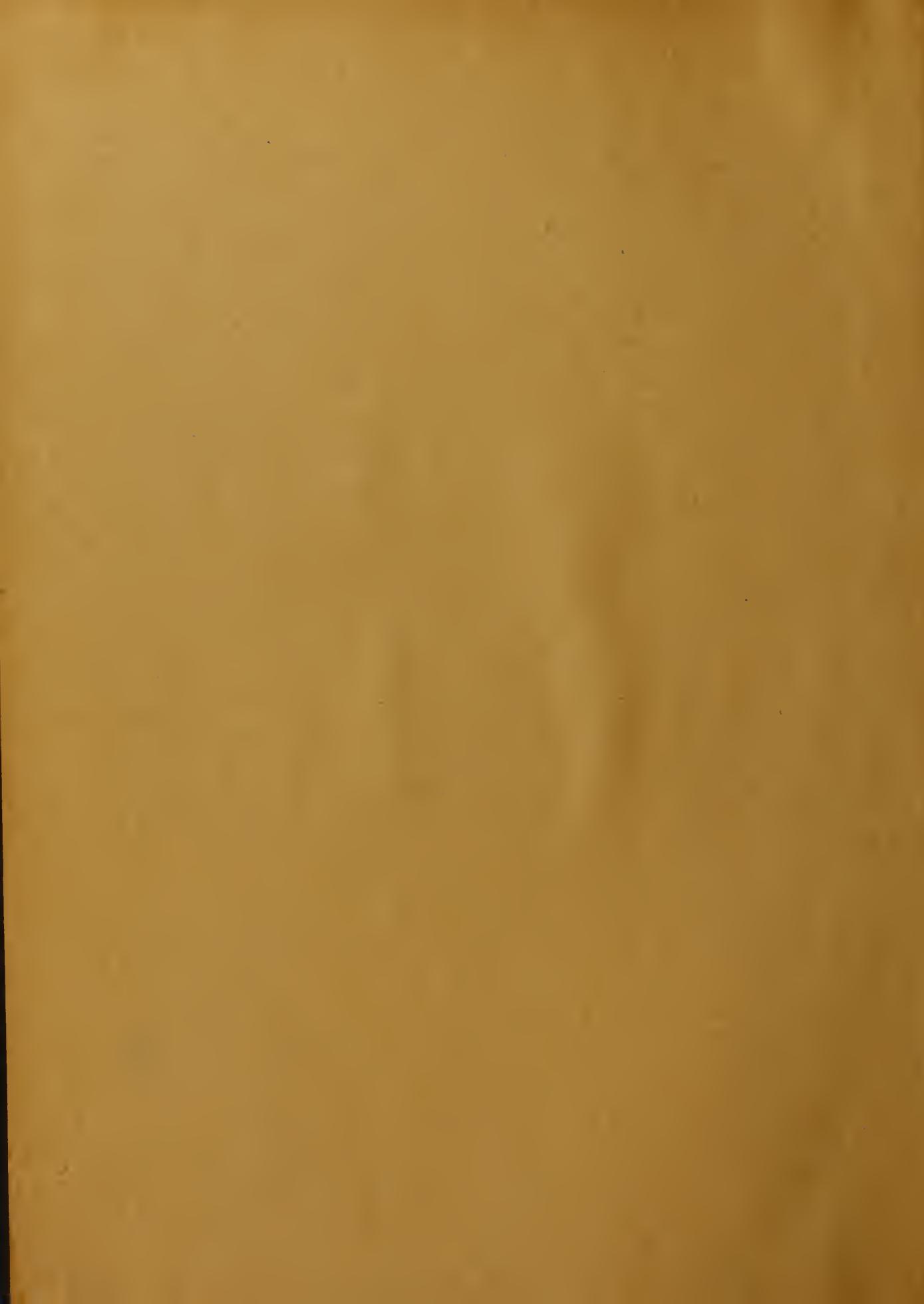
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# The Journal of the South Carolina Medical Association

VOL. XXIX.

GREENVILLE, S. C., JANUARY, 1933

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# The Journal OF THE South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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## EDITORIAL

### PAYMENT OF DUES

Notwithstanding economic conditions membership dues in all the state medical societies appear to have been nearly up to normal in payment. In South Carolina our dues stand at five dollars for membership in the State Association which is exactly the same as it was when the Association was organized in Charleston February 14, 1848. Many state societies have increased their dues to seven, ten, fifteen and even twenty dollars. It is believed that in the last analysis membership in the State Medical Society gives more for a smaller outlay of money than any organization a medical man may be a member of. Perhaps a few doctors may feel that this is one place in which rigid economy may be practiced but fortunately there is evidence that so far only a very few have acted upon this thought. In our judgment there never has been a time in which the doctor should value his county medical society membership so highly. As the New

Year unfolds with its vast problems the medical profession will find that a strong organization is the only hope for solving some of them. We would urge our membership to pay their dues promptly and thus relieve the county treasurers from the necessity of frequent requests, in this regard.

### MARLBORO SOCIETY ANNUAL MEETING

One of the most enthusiastic county society meetings held every year is that at Bennettsville immediately after Christmas. This year was no exception to the rule. After a visit to the splendid county hospital on the afternoon of January 11 the society and its guests met in the Masonic Temple to the number of some seventy five. Dr. T. H. Smith occupied the Chair as President while Dr. D. D. Strauss the highly efficient Secretary circulated around to secure the names of all those who expected to participate in the banquet to follow. It is un-

necessary to state that no one was missing when the time for that delightful event occurred.

The program was opened by Dr. J. R. Young, President of the South Carolina Medical Association who spoke on, "The Management of Skull and Brain Injuries." This paper was followed by one from Dr. E. A. Hines, Secretary of the State Association who considered the Report of the Committee on the Costs of Medical Care. Other interesting

## ANNUAL REPORT OF STATE BOARD OF HEALTH

The Fifty Third report of the activities of the State Department of Health has been printed and distributed to the Legislature and to others interested. With few exceptions the health of the people of South Carolina stands at a higher level than for many years. It is believed that much of this improvement is due directly to the activities of the personnel of the State Board of Health of South Carolina. All

### OUR GUESTS FOR THE SPARTANBURG MEETING

President J. R. Young has been exceedingly fortunate in the selection of the invited guests this year. The following distinguished men have accepted his invitation to be present:

#### Dr. Olin West

South Carolina has never been honored by a visit from the present Secretary and General Manager of the American Medical Association. This year Dr. West who occupies one of the most exalted positions possible for any medical man will be with us. Dr. West will speak at the great public health meeting to be held on Wednesday night, April 19.

#### Dr. William David Haggard

Dr. Haggard is one of the best known surgeons in America. He is a past President of the American Medical Association, a past President of the Inter-State Post Graduate Assembly and at present President of the American College of Surgeons. His honors have been too numerous to mention in a small space. He is Professor of Surgery at Vanderbilt University and will be welcomed by many of his former students now living in South Carolina. Dr. Haggard is the most fascinating orator in American medicine.

#### Dr. Paul P. McCain

Dr. McCain is one of the most eminent authorities on tuberculosis in this country. For many years he has been at the head of the North Carolina Tuberculosis Sanatorium. Dr. McCain is no stranger in South Carolina having been born and reared at Due West. His message will be particularly addressed to the general practitioner.

papers were presented in rapid succession as will be found later in the Journal.

The banquet had for its genial toastmaster, Dr. Douglas Jennings, well known for his ability not only as a skilled physician but as a delightful host. The after dinner speeches were both entertaining and edifying.

Quite a few physicians from North Carolina who are well known for their scientific attainments were present for the meeting.

of the divisions have functioned with admirable loyalty and in some instances considerable self sacrifice in maintaining their departments to a high degree of efficiency with reduced appropriations.

Looking back over the years one is impressed with the generous attitude of the state in appropriating funds for the health of its people. There is an abiding conviction that this would not have been done if our representatives in the legislature had not been convinced

that the money was bringing in worthwhile returns in better sanitation and lowered morbidity and mortality.

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#### TITLES OF VOLUNTEER PAPERS FOR THE STATE ASSOCIATION MEETING DESIRED

The Scientific Committee is now engaged in making up the program for the meeting of the State Association in Spartanburg, April 18, 19, 20. About half of the program will consist of papers by invited essayists and the rest from volunteer contributions. Members of the Association should send in their titles to the Secretary at an early date in order that the Committee may have the complete program in the hands of the printers well in advance of the meeting.

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#### THE SPARTANBURG MEETING, APRIL 18-19-20. SOME SPECIAL FEATURES

The Eighty-fifth annual meeting of the State Association offers many attractive features. In recent years it has been necessary to limit the program to not more than twenty-five papers. This year there are certain unique changes.

The Scientific Committee decided to request each one of the special medical societies of the state, such as Internal Medicine, Pediatrics, Urology, etc. to elect an essayist to present a paper on the program of the State Association. By this plan it is believed there will be a much keener interest than usual in what they have to say.

There will be clinics both before the Association in the program section and in the various hospitals of the city of Spartanburg.

On Tuesday night, April 18, the House of Delegates will convene at seven o'clock instead of eight as formerly. Many problems will be discussed before the House of Delegates of more than usual importance.

The President has invited Dr. Robert Wilson, a member of the national committee on the costs of medical care, to address the House with a view to interpreting the findings of the committee. It is probable that a large number of the members of the Association will be present to hear this address.

The various standing committees including the Committee on Medical Economics will come in for a full share of attention when they make their reports.

The hotels in Spartanburg are amply able to take care of everybody in comfort. The Cleveland Hotel has been designated as Headquarters but the Franklin and the Gresham are both approved by the committee.

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#### MEETING OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA, GREENVILLE, S. C., FEBRUARY 13, 14 AND 15, 1933

South Carolina doctors always look forward with keen interest when the Tri-State meets within our borders. There are special features this year offering unusual inducements for a large attendance. A guest speaker will be Dr. William W. Duke of Kansas City, a well known student of allergy. Special attention is being called to arrangements being made for amplifying heart and lung sounds of patients being examined so that they can be plainly heard by every one in the meeting hall. The host city this year has had such a large experience in entertaining medical societies that the fact of meeting there alone insures success even if there were no other features. Hard times or no hard times when the Greenville doctors send out an invitation to participate in their hospitality the attendance is always fine and the enjoyment unsurpassed. Let's give the Tri-State a big welcome!

## ORIGINAL ARTICLES

### \*SOME EYE CONDITIONS COMMONLY UNRECOGNIZED OR MISMANAGED BY THE GENERAL PRACTITIONER

By J. W. Jervey, Jr., M.D., Greenville, S. C.

Please bear in mind that in presenting this subject for your consideration, I have chosen it not as a medium for criticism, in which many of us indulge all too freely, but with a desire to bring before you something which will be of value not only to your patients but to yourselves. We are often guilty of attempting guidance in matters on which we are ill informed, sometimes not realizing that such advice hastily given is taken seriously by unsuspecting, often adoring patients. Later these same persons are rudely awakened when by chance or otherwise they come into the hands of one who can and does render the proper service. We have lost prestige, they confidence, and not infrequently life or limb. In the following, no attempt is made to include all possible pitfalls. Each category of mistakes is represented by at least one case in my personal experience during the current year. Nothing will be said that cannot and should not be grasped by any doctor of medicine, and that is not practical in its application to the methods of the busiest practitioner. The facts will show that a little more attention is required for disturbances which off hand may appear of little import. Bear with me then for, "It is impossible for anyone to begin to learn what he thinks he already knows." Again let me emphasize that what I have to say is not in criticism of counsel or therapy sincerely and thoughtfully given, but is expressed with the hope of directing such efforts into the proper channels to the mutual benefit and satisfaction of both patient and physician.

Foreign bodies are of frequent occurrence stuck on the cornea. They are easily removed with the aid of a small sharp instrument and a little 4 per cent cocaine, or better 2 per cent

butyn. Good illumination is prerequisite and a loup is most helpful. The patient's two eyes should be open and his attention fixed on some object in such a position as to bring the foreign body into the most accessible place. Do not try to rub a foreign body off the cornea with a cotton wound applicator. You are apt to embed it and I have seen two thirds of the corneal epithelium removed in this manner causing untold agony when the proper method would have brought instant relief. Foreign bodies also frequently lodge in the conjunctival sack, and the superior fornix must be carefully examined by evertting the upper lid, causing the patient to look down and exposing the upper folds of conjunctiva by making firm pressure downward with some flat blunt instrument outside the upper lid. These foreign bodies are most easily removed with a soft cotton wound applicator and usually no anesthesia is necessary. Care must be taken not to injure the cornea.

A chalazion is a cyst in the eyelid due to the closure of the duct of a Meibomian gland and consequent retention of secretion. It is distinguished from a stye in that it is usually chronic, not painful, and is freely moveable under the skin. A chalazion should be incised on the conjunctival surface and curretted with a proper instrument, not allowed to rupture and granulate on the inner surface of the lid. This is not a serious matter, but is ugly and uncomfortable. Occasionally, in early stages, a cure may be effected by the use of yellow oxide of mercury ointment and massage. Any patient who has had a chalazion should have the benefit of a careful refraction, as the condition is one not infrequently due to eye strain.

Phlyctenular conjunctivitis is a localized area of redness in the conjunctiva leading up to a small grey or yellowish head or piling up of the epithelium near the corneal margin at a place where this is exposed by the palpebral fissure. It is often of long duration, causes considerable discomfort to the patient, and is unsightly. The usual treatment seems to be argyrol or some similar preparation which

\*Read before the Greenville County Medical Society, Greenville, S. C., Nov. 7, 1932.

might just as well have been omitted entirely. I do not subscribe to the general belief that the condition is tuberculous. One or two injections of lactigen intramuscularly commonly results in rapid and permanent cure. Let me here say parenthetically that if you are constrained to do something for an eye condition of whose nature you are in doubt, you can safely and usually with benefit give a foreign protein injection. This procedure is infinitely safer than is the custom of prescribing atropine.

I will not go into a discussion of the confusion that has arisen in times past in this State between follicular conjunctivitis and trachoma. Suffice it to say that follicular conjunctivitis is a common and benign condition and that trachoma is so rare in this locality as to be a curiosity. I have seen, since being in practice, but one case, and that an old one of long standing acquired elsewhere.

It is excusable for the inexperienced at times to mistake an iritis for a conjunctivitis. Both conditions may be present at the same time. The deep congestion about the limbus, the tenderness of the eyeball, and the constricted pupil of iritis distinguish it from conjunctivitis with its superficial and more generalized congestion and its discharge. The treatment of iritis is the removal of focal infection, foreign protein injections, protection from light, steam vapor baths, and the local use of atropine to keep the eye at rest. Dionine locally and salicylates internally are often very useful. Never use atropine, however, unless you are sure of the absence of glaucoma with which iritis may readily be confused. For conjunctivitis, cleansing as often as may be necessary, and the local use of antiseptics are indicated. Daily application of one or two percent silver nitrate and the frequent instillation of zinc chloride one grain to the ounce or some mild silver preparation are recommended. Remember no silver preparation should be used long at a time because of the danger of argyrosis.

I have before this society and elsewhere more than once stressed the importance of the early recognition of glaucoma. It seems inconceivable that not four months ago a capable

physician referred to me a man whom for three weeks he had been treating for a chronic conjunctivitis which in reality was an acute glaucoma. The patient was suffering intensely, had lost all vision in the affected eye, and yet the eyeball had never been palpated. Early treatment might have saved his sight. There is no excuse for missing a case of this character, and little more for missing the chronic type of glaucoma where the simple maneuver of palpating the eyeballs with the two index fingers will establish the diagnosis. Vague headache, transient attacks of blindness, or rainbow vision should always bring this condition to mind. All cases of glaucoma do not end in blindness, and early treatment is essential.

Not long ago I saw a little girl seven years old with an internal squint. She had developed this trouble during early childhood. Her family physician, a highly reputable and competent man, and a member of this society, had advised the parents not to take the child to an oculist as he would want to operate on it, and it probably would not do any good. A similar case was advised by a physician not to consult an oculist as the condition would right itself by the time the child was of school age. I cannot conceive of anyone, let alone a doctor of medicine, taking the responsibility of deliberately advising parents to allow their child to continue with a strabismus until such time as one eye is probably hopelessly blind, or there is no hope for normal binocular vision. Too few men realize that some cases can be cured by glasses, and that the sooner spectacles are worn the better the chances of cure. In cases that need them, lenses can be prescribed as early as eighteen months of age or even sooner. There is no trouble in getting these little patients to wear them. They actually cry for them. After glasses have been given a thorough trial is time enough to consider operative measures.

Refractive errors, more and more are being recognized by the practicing physician as being conducive to eye strain, nervousness, headache, and even gastro-intestinal symptoms, but many of these patients are unwittingly allowed to suffer. Because a patient is wearing glasses

does not rule out the possibility of refractive error as the cause of his symptoms. Unfortunately even oculists are not infallible. If a patient comes to you wearing glasses, by all means find out who prescribed them, and if he has been fitted by an optometrist, you will in 99 per cent of such instances do your patient a favor by referring him to a competent oculist. Unscrupulous opticians frequently prescribe weak plus or minus lenses for no other reason than to make a sale. It is a reprehensible practice, but one well known to the initiated.

And now, my friends, in conclusion, do not misunderstand my motives. By all means do what you can for the relief of any condition which confronts you, and save your patient worry and expense wherever you can conscientiously do so, but do not jeopardize his comfort and his happiness through avoidable errors. He will not think the less of you if you, being unable to bring relief, can direct him where he may find and obtain it. Let us remember the importance of our position when consulted as physicians, recalling that when Thales was asked what was difficult, he said, "To know one's self." And what was easy, "To advise another."

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#### \*SOME RECENT ADVANCES IN SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM

By Austin T. Moore, M.D., Columbia, S. C.

In 1924, Dr. N. D. Royle, an Orthopedic Surgeon of Sydney, Australia, published his epochal work on surgery of the sympathetic nervous system for the relief of spastic paralysis. Royle claimed that the striate muscles of the extremities were supplied with sympathetic fibers which preserved the normal "plastic tone" of the muscles. In any cortical lesion or upper neurone injury, the inhibitory impulses are cut out, "plastic tone" increases, reflexes are exaggerated, and the muscles assume the typical spasms of spastic paralysis. Various operations had been devised. Intra-cranial approach to try and remove the cause; Foerster's operation of laminectomy and severance of the

spinal roots; Stoffle's operation of partial nerve resection; various muscle stretching operations; tenotomies and muscle transplantations. None of these methods produce entirely satisfactory results and while searching for something better, Royle conceived the idea of sympathetic surgery for this condition. After a great deal of animal experimentation, he developed the operation of ramisection. The white and gray rami communicantes, over which flowed impulses to the extremities, were cut. Neither the ganglia nor trunks were removed. After these operations not only was the spasticity relieved but Royle noticed that the extremity became warmer, pinker in color and has a very much improved circulation. This observation furnished tremendous impetus to the further study of the sympathetic nervous system. Knowledge of its anatomy and physiology has been enlarged and a great deal has been published concerning the application of this type of surgery to circulatory and other diseases. Some men have been over-enthusiastic and brought disrepute to the method but gradually a procedure has been developed which is safe and sure to produce the desired results in properly selected cases.

#### ANATOMY

To classify the terminology, it must be understood that the term, "sympathetic nervous system," is used to define what was formerly known as the autonomic nervous system. The thorico-lumbar outflow was known as the sympathetic and the craniosacral outflow as the parasympathetic. Together these formed the autonomic.

To give a brief and concise resume of the anatomy, the following quotation is taken from Ranson's "Anatomy of the Sympathetic Nervous System":

"The sympathetic nervous system is an aggregation of ganglions, nerves and plexuses thru which the viscera, glands, heart, blood vessels and smooth muscle in other situations receive their innervation. The most conspicuous feature of the system is a pair of ganglionated nerve cords or sympathetic trunks which extend vertically through the neck, thorax and abdomen. Each sympathetic trunk is composed of a series of ganglions bound together by

\*Read before the Columbia Medical Club, Columbia, S. C., Sept. 20, 1932.

short nerve strands. Every spinal nerve is connected with the sympathetic trunk of its own side by one or more gray rami communicantes through which it receives sympathetic fibers for the control of blood vessels, sweat glands and smooth muscles of the hair follicles situated within the territory of its distribution. The majority of the nerve fibers taking origin in the ganglions of the sympathetic chain are distributed through the gray rami and the spinal nerves. The ganglions of the thoracic and abdominal portions of the chain are less concerned with visceral activity than with constriction of the peripheral blood vessels, erection of the hairs, and secretory activity of the sweat glands. But the upper thoracic and cervical ganglions bear a more intimate relation to the thoracic viscera, since they contain the cells of origin of postganglionic fibers for these viscera. The thoracic and upper lumbar nerves are connected with the sympathetic chain by white as well as gray rami communicantes. These white rami contain both afferent and efferent fibers. The latter take origin from cells in the gray matter of the spinal cord, travel through the ventral root and white rami, and enter the sympathetic system, to terminate in synaptico-motor relation with the nerve cells found in the sympathetic ganglions. They are often designated as pre-ganglionic fibers, while those that arise in the ganglions and relay the impulses onward are called postganglionic. The gray rami contain postganglionic fibers; the white rami contain preganglionic fibers.

The majority of preganglionic fibers turn either upward or downward in the sympathetic chain and run for varying distances within it before ending in its ganglions. The cervical sympathetic trunk is composed exclusively of preganglionic efferent fibers, derived through the white rami from the upper thoracic nerves and ascending fibers derived through the white rami from the lower thoracic and upper lumbar spinal nerves. Those fibers of the white rami which are concerned with the innervation of the abdominal viscera, pass into the splanchnic nerves and end in the coeliac ganglion. These fibers reach the splanchnic nerves after passing through the lower half of the thoracic sympathetic chain; but they are not interrupted in the

chain ganglions through which they pass.

The sympathetic nervous system receives additional fibers from the spinal cord by way of the visceral branches of the third and fourth sacral nerves and from the brain through certain of the cranial nerves.

There are, then, these three streams of pre-ganglionic visceral efferent fibers;

(1) The cranial stream from the third and seventh, ninth and tenth cranial nerves;

(2) The thoracolumbar stream from the thoracic and upper lumbar spinal nerves by way of the white rami; and

(3) The sacral stream from the second, third and fourth sacral nerves.

The cranial and sacral streams belong to what is commonly called the parasympathetic system. Most of the sympathetic nerves contain, in addition to the fibers already discussed, also sensory fibers, which convey impulses from the viscera to the spinal cord. These sensory fibers have their cells of origin in the spinal ganglions and reach the sympathetic system by way of the white rami. Visceral reflexes, therefore, travel arcs of at least three neurons each. The impulses reach the spinal cord along visceral afferent fibers in the dorsal root and leave along preganglionic efferent fibers in the ventral roots and white rami. These fibers end in sympathetic ganglions, and the impulses which they carry are relayed to involuntary muscle and glandular tissue by postganglionic fibers. The ganglions of the sympathetic trunk do not serve as reflex centers but only as relay stations in the conduction pathways from the spinal cord to the viscera."

For interruption of the impulses supplying the viscera specially devised operations for Hirschsprung's disease and angina pectoris have been developed. However, the large majority of sympathetic surgery deals with conditions involving the extremities and it is in this thoracolumbar stream that we are particularly interested. From various experiments and operative results, we find that the vasoconstrictor fibers supplying the blood vessels of the extremities enter the spinal nerves and are given off at intervals corresponding with the somatic segments; while in the abdominal,

thoracic and cranial cavities, the vasoconstrictor fibers follow the vessels to their terminal distribution. This segmental distribution in the extremities explains why periarterial sympathectomy as advocated by Jaboulay and Leriche is not uniformly successful. Surgery of the ganglia is more logical. To completely interrupt these vasoconstrictor impulses in all four extremities we must be sure to make the section in the lumbar region high enough and in the thorax low enough. The operation of sympathetic ganglionectomy is planned because of the fact that the white rami which form the central connections with the spinal cord, are present only from the first thoracic to the second lumbar ganglia. For the lower extremity, there are no white rami below the second lumbar ganglia and no gray rami below the fourth. Removal of the first and second thoracic ganglia with the intervening nerve trunk and all connecting branches will effectually interrupt all impulses to the upper extremity. Removal of the second, third and fourth lumbar ganglia, the intervening trunk and all branches will cut off the sympathetic innervation to the lower extremity. Following this procedure, the regions supplied by the sympathetics are paralyzed. The blood vessels dilate, the sweat glands cease to function, the pilomotor muscles are inactive and clinically it seems that the striate muscle is affected by a decrease in its plastic tone. When the first and second thoracic ganglia are removed the effect is extended cephalward also, the vessels dilate, the upper eyelid droops somewhat and the pupil of the eye is constricted. This result in the appearance of the eye is known as Horner's syndrome; but it is not very noticeable when bilateral.

Our knowledge of the anatomy of the sympathetic nervous system has been improved a great deal by the recent works of Ranson, Kramer, Todd, Potts and others. However, there is not yet a unanimity of opinion and many of the clinical results as claimed cannot be supported on the known anatomical basis.

#### PHYSIOLOGY

Here was a case of a limb with no sympathetic system is admittedly vague; but undoubtedly the knowledge of its physiology is

even less understood. There has been every gradation of acceptance of Royle's explanation of his results to its total rejection as expressed by Davis and Kanaval. Varying results and peculiar phenomena are described by men of national reputation and unquestionable veracity which cannot be explained either anatomically or physiologically. Spasticity or increased "plastic tone" is not understood. Many deny its existence or that it can be relieved by sympathetic surgery. The relief of angina pectoris claimed to follow various procedures can not be explained. Why periarterial sympathectomy has apparently cured many cases cannot be understood. Why is it that the results were frequently transient and the condition recurred after the nerves were completely divided? Either the operation was incomplete or there are other conduction pathways. Why is it that frequently a unilateral operation will give a bilateral cure?

Flohow reports a highly interesting and very bizarre experience. A child was operated on who six months previously, had had a lumbar-ganglionectomy done on the left side. Following the second operation, a bilateral dorsal ganglionectomy, the temperature rose to 108 degrees and a very baffling situation developed. The left lower extremity which, due to the previous operation, had been dryer, pinker and warmer than the right became pale, clammy and ice cold. The unoperated side became hot with the rest of the body. The condition gradually subsided and within 48 hours the temperature was normal and the left lower extremity became warmer than the right—as it was before the operation.

Here was a case of a limb with no sympathetic supply, whose blood vessels had been in constant dilatation and which suddenly became constricted following a sympathetic operation in another part of the body. This phenomena cannot be explained by our present knowledge of anatomy or physiology. It indicated that there must be some other mechanism present or other sympathetic pathways which have not yet been found.

Because of the vasomotor control most surgery of the sympathetic system is concerned with the thoraco-lumbar stream; however, a

discussion of the physiology would not be complete without mention of the visceral innervation and its function. The sympathetic and parasympathetic systems are closely allied. They are commonly thought to be antagonistic, but in reality, are complementary. Recent investigations have revealed that when either system is stimulated, a specific result is obtained only when the organ is in a definite condition. It is thought that the sympathetics have most to do with the motor mechanism of the sphincteric functions and the parasympathetics with the motor functions of the lumens. Also the sympathetics influence visceral tone. We know that spinal anesthesia paralyzes the sympathetics and that under spinal anaesthesia, there is an increase of peristalsis with a concomitant relaxation of sphincteric control. Upon this knowledge the operation on the sympathetics for the relief of Hirschsprung's disease and chronic constipation is based.

#### DISEASES RELIEVED BY SURGERY OF THE SYMPATHETIC SYSTEM

1. *Angina Pectoris*.—A tremendous amount of work has been done in an attempt to relieve this condition, much of which has been Empirical or purely experimental in nature. Results have been accomplished which cannot be explained anatomically. Many methods of procedure have been devised. Although brilliant results have been accomplished, a reasonable, safe and sure method which can generally be used, has not been evolved.

2. *Spastic Paralysis*.—Whether or not the sympathetics have any relation to tonus in striate muscle is still a mooted question. Royle bases his assertions that they do control muscular tone on the works of Bocke, Hunter and others. His own experiments and clinical results seem to bear this out. Flothow also is of the opinion that there is some influence. Undoubtedly a great many of these cases seem to be benefitted. When sympathetic surgery is combined with the other accepted forms of treatment—Stoffle operations, tenotomies, stretchings; muscular reeducation, etc., the best results are accomplished.

3. *Chronic Arthritis*.—For centuries heat has been applied in one form or another for the relief of arthritis. The modern baking lamps

and diathermy machines cause temporary vaso-dilatation with increase in circulation, heat and oxygenation, diminution of swelling, absorption of by-products and decrease of pain. Sympathetic ganglionectomy produces all of these changes permanently. The cessation of pain enables increased use of the joints which is in itself beneficial. Because of the lack of pain the patient is inclined to do too much and should be warned to very gradually increase his motion. Only the chronic cases are suitable for this type of surgery. The patient should be young enough for his blood vessels to dilate well. The most distal joints are best affected. In destructive types of arthritis with bony ankylosis, no benefit may be expected. The disease should be most periarticular. When the cases are properly selected very gratifying results can be obtained especially when combined with the other usual methods of treatment.

4. *Raynaud's Disease*.—Here the operation is an absolute specific. The disease is one of disturbed innervation with vasomotor spasm. When the sympathetic ganglia are removed vasodilatation replaces the vasoconstriction. All pain is immediately relieved and a complete cure is effected if gangrene has not taken place. In certain of these cases when gangrene appears to be inevitable the part may be saved.

5. *Buergers Disease*.—Buergers disease is frequently associated with vasospasm and severe pain. By sympathetic surgery the pain and vasospasm is relieved. If the operation is done early in the disease there may be considerable dilatation of the larger vessels and the part may be saved from gangrene. Frequently pulsations return to arteries which were pulseless before the operation.

It is believed that the best results are accomplished when sympathetic surgery is combined with other therapy, especially intravenous injection of a hypertonic salt solution.

6. *Scleroderma*.—Generalized hardening of the skin is probably related to Raynauds disease. Sympathetic surgery improves the circulation and will cure these cases if not too far advanced.

7. *Skin Ulceration*.—Skin ulcerations may be cured by the capillary dilatation produced by

ganglionectomy. It is especially applicable in the long standing trophic cases.

8. *Delayed Growth of An Extremity.*—Very frequently in infantile paralysis, one extremity has been involved and may be several inches shorter than the other. The delayed growth is part of the atrophic process and due to poor circulation. Plastic bone lengthening can be done, but only to a limited extent. If sympathetic ganglionectomy is done early in childhood, the increase in circulation obtained may allow the limbs to develop equally.

9. *Hirschsprung's Disease.*—Apparently all operations for this disease have been universally successful. There has been no case of failure reported when the operation was properly performed. There are several types of operation. Each one aiming to increase the tonus of the intestine and decrease the spasm of the sphincters. They seem to be equally efficacious.

Operations on the sympathetic nervous system have been done for many others than the foregoing conditions but these are the commonest for which it is used and beneficial results may be expected.

#### TESTS FOR THE APPLICABILITY OF

#### SYMPATHETIC OPERATIONS

Early in the use of sympathetic ganglionectomy there were no accurate tests to determine which cases were suitable for this procedure, and there was no way in which to ascertain that a definite result would be accomplished. It was a more or less hit or miss proposition which accounts for many of the poor results reported. Now we can determine exactly what the outcome will be. Cases which are not suited are not subjected to operation.

1. *Reflex Test.*—Royle has described a very simple test which can be used in vasospastic cases and which show hyperactivity of the sympathetic system. The patella reflex is tested while having the patient supported in a reclining position with limbs hanging over the edge of the couch. "When the patella's tendon is tapped, there is a phasic response in which the knee extends, and a subsequent variable phase. If tone is exaggerated the leg will stay in the extended position momentarily and return relatively slowly to the position of flexion.

If the position of flexion is assumed without oscillations of the leg, tone is hypernormal. If oscillations are of wide amplitude and continue for a time, the quadriceps muscle is hypertonic." This test only shows a hyperactive sympathetic system but does not indicate what results may be accomplished after ganglionectomy or ramiectomy is performed.

2. *Fever Test.*—Brown while collaborating with Adson devised his "fever test." It is known that natures reaction to fever is through the sympathetics. There is vasodilation, the body becomes warm and heat is dissipated Brown uses this principle to test sympathetic relaxation and the extent of vasodilation possible in cases of vasospasm. About 50,000,000 organisms of a triple typhoid vaccine are given intervenously according to the age and weight of the patient. The surface temperature of the extremity under consideration is taken before and after the injection and is compared with the oral temperature. Normally the surface temperature should rise 3 to 6 times as high as the oral temperature. Brown has mapped out a "vaso-motor index." Cases which do not show a surface rise of temperature at least 1 1-2 to twice as great as the oral temperature are not subjected to operation. In such cases there is organic disease or fibrosis of the vascular system to the extent that vasodilatation is impossible or insufficient to give relief. Severance of the sympathetic nerves would be useless.

3. *Sympathetic Injection Test.*—Spinal, general or regional anaesthesia can be used as a preliminary test before doing sympathetic operations. The rise of surface temperature and increased circulation showing the effect of sympathetic paralysis.

Flohow uses direct procain injection of the sympathetic ganglia and claims that this more closely approximates what one can expect from surgical removal of these ganglia. This method is very satisfactory, has few hazards and is comparatively easy to do. The injections are made through spinal needles placed to either side of the spine according to the Lundy or Labat technic. The resulting rise in temperature is measured as in the Brown fever test.

## SPECIAL APPARATUS

Special electric thermostats have been devised to test the surface temperatures. The "Thermoderm" and electric thermocouple seem to be most popular. The instrument is placed against the distal part of the extremity (hand or foot) and the slightest variation of temperature is instantly recorded.

*Alcoholic Injections.*—Due to the magnitude of the surgery in operations of the sympathetic system a great many cases cannot be done because of the risk. For these cases, and where only temporary relief is indicated, alcoholic injection of the ganglia has proven a tremendous boon. The sympathetic nerves are paralyzed exactly as though the ganglia had been removed; and while the results are usually not as complete, they are the same as in the more radical removal of the ganglia. The alcohol is injected following a preliminary injection of novocain to be sure that the needles are in the right place. Usually four spinal needles are used and 5cc of absolute alcohol deposited in each needle. This method can be used in older subjects who are poor risks and frequently complete relief from pain may be obtained where no vasodilatation can be accomplished.

Pains of vascular origin and atypical neuritic pains may be relieved and months of comfort given to these poor sufferers. The result of the injections last from a few months to more than a year. If necessary they may be repeated. The operation is not without danger but when one is thoroughly familiar with the method, the anatomy and the technic, the hazards are not great. Neuritic pains may develop, especially in the dorsal region, from irritation of the spinal nerves. This usually clears up in a few weeks. Varying degrees of shock may result from pleural irritation but a careful technic and preliminary novocain injection should avoid this. Paralysis has been reported from entering the spinal canal. This seems inexcusable. No deaths have been reported. The Horner syndrome, as in dorsal ganglionectomy, necessarily follows the injection of alcohol.

The following is a partial list of conditions in which injections of alcohol may be used as a very valuable therapeutic measure:

- (a) To relieve the pain caused by malignancies.
- (b) Circulatory deficiency and pain due to arterio-sclerosis.
- (c) To improve circulation and determine the line of demarcation in proposed amputations.
- (d) Diabetic neuritis, and gangrene.
- (e) Paralysis agitans.
- (f) Trifacial neuralgia and atypical facial neuralgias.
- (g) Atypical neuralgias of the extremities.
- (h) Migraine.
- (i) Angina pectoris.
- (j) Bronchial asthma.
- (k) Trophic ulcers and skin conditions.
- (l) Scleroderma.
- (m) Causalgia.
- (n) Delayed union in fractures.
- (o) Any of these conditions which may be relieved by ganglionectomy but where operations are contra-indicated or a permanent result is not required.

## TECHNIC OF OPERATIONS

Space does not permit a description of the specially devised operations for angina pectoris, pelvic disorders or Hirschsprung's disease.

## OPERATIONS ON THE DORSAL GANGLIA

1. *Anterior Approach.*—Royle's operation is done through an anterior approach. A small incision is made above the clavicle and the sympathetic trunk is exposed on the neck of the first rib. The trunk is severed below the first thoracic ganglia. The operation can be done quickly and under local anesthesia if desired. The results, however, are often unsatisfactory because the operation is incomplete. All of the nerve fibers may not be divided by simply cutting the thoracic trunk. White rami going to the first thoracic ganglia are left intact and frequently there are gray rami from the second thoracic ganglion to the brachial plexus. Possibly with improved technic this operation may become generally adopted.

2. *Posterior Approach.*—Adson's posterior approach is founded on the work of Henry. It is a more complete operation but is rather difficult technically. Both sides can be done through the same incision which is made over

the spinous processes in the mid line. The transverse process and a portion of the second rib is removed. The sympathetic chain is clearly exposed between the pleura and body of the vertebra. The cervico-thoracic and second thoracic ganglia with the intervening trunk is removed. All sympathetic fibers supplying the upper extremities are completely removed by this method.

#### OPERATIONS ON THE LUMBAR GANGLIA

1. *Transabdominal Approach.* — Adson's transabdominal approach exposes the sympathetic chains through a mid line abdominal incision. The large intestine is mobilized by incising the posterior parietal peritoneum. Dissection through these incisions on both sides of the spinal column is necessary to reveal the sympathetics. The second, third and fourth lumbar ganglia with their intervening trunk are removed. The advantage in this operation is that both sides may be operated on at the same time. The disadvantage is that it is an heroic procedure and not infrequently is followed by shock, post operative adhesions, intestinal obstruction or other complications. The operation carries a definite mortality.

2. *Lumbar Approach.* — The lumbar approach devised by Royle is practically the same as that for kidney operations. The abdominal contents are retracted mesially and the entire procedure is done extraperitoneally. This method of approach is much preferred and recommended because there is little or no attendant shock, a better exposure of the second lumbar ganglia is obtained. There are no post-operative complications to fear. No report of death following this method has been found. Its disadvantage lies in the fact that only one side can be done at a time.

#### CLINICAL RESULTS

We have had only a small series of cases but they have been fairly well diversified. With the combined experience in periarterial sympathectomy, sympathetic ganglionectomy and alcoholic injection of the sympathetic ganglia, we have treated the following conditions:

- (a) Buergers disease.
- (b) Reynauds disease.
- (c) Chronic arthritis.
- (d) Spastic paralysis.

- (e) Scleroderma.
- (f) Trophic skin ulcer.
- (g) Paralysis agitans.
- (h) Atypical neuritis of the extremity.
- (i) Ganglionectomy to lengthen a limb shortened by infantile paralysis.

- (j) Injection of the dorsal ganglia to relieve pain due to malignancy of the jaw and cheek.

We have had no deaths. One child appeared to have a partial intestinal obstruction following the transabdominal approach. The posterior approach is followed by a smoother convalescence and is much preferred. Periarterial sympathectomy has been discontinued. Every case in our series has shown some improvement from the operation.

#### CONCLUSIONS

1. Stimulated by the work of Royle, our knowledge of the anatomy and physiology of the sympathetic nervous system has greatly improved even though we cannot explain certain of the phenomena which have been observed.

2. There are certain reliable tests which enable one to accurately select cases for operation and a predetermined result can be obtained.

3. Operations have been devised which are safe, sure and reliable when properly performed on properly selected cases.

4. A great many cases not amenable to operation may be relieved by alcoholic injections of the ganglia.

5. While surgery of the sympathetic system may have been overworked in the past it is on a rational basis now and is here to stay. Although much has been learned there is still a great deal to be discovered. We know that there is a connection between the sympathetic and central nervous systems and that constant mental strain produces tension of the sympathetic system. Who knows but what in the future an individual with a high nervous temperament, or one whose environment or occupation produces a severe mental strain may be spared the possibility of a seriously disabling condition through a relatively simple surgical procedure on the sympathetic nervous system?

We know that high blood pressure, cardio-renal disease, angina pectoris, ulcers of the stomach, visceroptosis, liver dysfunction, en-

doctrine disorders and other serious conditions may result from nervous tension due to ones occupation or physical make-up. What a tremendous advance it would be if these things could be prevented, especially when they frequently appear in young individuals.

We are not presumptive enough to make predictions but are interested enough to anticipate developments in this particular phase of medicine,—the surgery of the sympathetic nervous system.

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#### MENINGEAL LESIONS COMPLICATING AURAL INFECTIONS

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From a cytological examination of the spinal fluid, meningitis may be divided into four groups: Serous, lymphocytic, polymorphonuclear or so called purulent meningitis, and meningism. It is essential that these types be defined before we enter our discussion.

Serous meningitis. This condition may be associated with mild or severe signs of clinical meningeal irritation. The spinal fluid is clear and under pressure. There is usually an increase in cells and Yerger(1) has set the arbitrary number of 250 per cu.mm. as the upper

limit. The cells are largely polymorphonuclears.

Lymphocytic meningitis. This type shows fluid which is clear or ground glass in appearance. It is usually under increased pressure and microscopic examination shows an increase in the lymphocytic elements of the fluid. There is also an increase in the amount of globulin. Tuberculosis and syphilis are the most frequent etiological agents, but it also occurs in poliomyelitis, encephalitis, influenza, mumps, and post-diphtheritic paralyses.

Polymorphonuclear meningitis. In this condition the fluid is found to be under considerable pressure and appears cloudy or turbid. There is a marked increase in polymorphonuclear cells. The infecting organism can usually be isolated, and the most frequent organisms found are the meningococcus, streptococcus, staphylococcus, pneumococcus, and influenza bacillus.

Meningism. A condition described by Dupre in which there are clinical signs of meningeal irritation and in which the spinal fluid is found to be under slight pressure, but otherwise normal.

As we study meningitis in relation to otitic disease, we find three of these four types present; the most frequent being the polymorphonuclear type, less frequent the serous type, and only in very rare cases, meningism.

Otitic meningitis is not uncommon. On the one hand we have studies such as those of Mumby and Jowett(2), who found meningitis in 2.5 percent of cases of mastoiditis, in a series of 800. On the other hand, Yerger found that in a large hospital, 5 per cent of all cases of meningitis were otitic in origin. The mortality is high. According to White(3), among 60 patients with otitic meningitis observed at the Mass. Charitable Eye and Ear Infirmary only two recovered, one of these had a sterile fluid with a cell count of 800, the other a spinal fluid with a cell count of 65,000 and culture showing large cocci in chains. Yerger had a mortality of 95 per cent in 38 cases. Hinsberg(4), on the other hand, had 16 recoveries out of 50 cases in the Breslau clinic, a mortality of only 68 per cent.

As investigators began to study meningitis

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of otitic origin, they were struck with the fact that frequently the spinal fluid showed all the cellular changes of a purulent meningitis, but that it was impossible to obtain the infecting organism from the fluid by either smear or culture. Thus Yerger was able to isolate the organism in only 65 per cent of 135 cases. To this condition, Plaut, Rhem and Schottenmuller were the first to apply the name, sympathetic meningitis. As defined by these authors, it is a condition of the cerebrospinal fluid caused by an inflammation in the neighborhood of the meninges, in which there is a marked increase in the cellular and albumin content of the fluid, but in which the fluid is sterile. There are associated clinical signs of meningitis. Since their description, many similar cases have been reported, and it is with this phase of meningitis that our paper will deal.

There has been considerable discussion as to why the spinal fluid shows the great increase in cells and yet remains sterile. Apparently, as Yerger points out, nearly all types of otitic meningitis are circumscribed in the beginning. In the primary stage, the meninges are infected and the spinal fluid reacts to the irritation by increase in leukocytes. The process may remain localized, but if it progresses, then the infection spreads to the spinal fluid and the organisms are disseminated (Kopetzky) (5).

There are several paths through which the infection may travel from the middle ear or mastoid to the meninges. Eagleton(6) describes them thus: (1) the labyrinth—the labyrinth system can be referred to as the outpost of the cerebrospinal fluid system connected with the main body by a small opening in the modiolus by way of the internal auditory canal; (2) the middle fossa, by thrombophlebitis of a small vein that goes through the tegmen tympani or antrum; (3) thrombophlebitis of a venous radical in the wall of the lateral sinus. Another fairly frequent route is through the cells in the apex of the petrous pyramid, giving rise to the so called Gradenigo's syndrome; fifth nerve neuralgia, otitic sepsis and later, abducens paralysis. Yerger prefers to classify them according to the medium of transportation. Thus: (1) local extension either by continuity or continuity of tissue, (2) hem-

atogenous infection by metastasis through the vascular routes, (3) lymphogenous infection through the lymphatic channels.

The symptomatology is varied. The signs of meningeal irritation may be very slight, consisting in nausea, headache, and slight stiffness of the neck, associated with a slight rise in fever and increase in blood leukocytes; or they may be marked with all the classical signs of a severe meningitis. The usual picture, however, is that of a patient suffering from an otitic infection developing headache, nausea and vomiting, with a rise in temperature, and physical signs consisting of a stiff neck and positive Kernig's sign. The blood leukocytes are usually increased. Whether there is a meningitis present can only be determined by examination of the spinal fluid. In this condition we find the fluid under pressure, with increased protein and decreased sugar, and a cell count ranging from 500 to 20,000. The smear and culture are negative for organisms.

The condition is curable as long as it is localized. The only treatment is surgical. The diagnosis must be made early, for as Eagleton has remarked, "If we are to cure meningitis, we must be two days ahead of the process and not one day behind." It is in the early stage, as described above, when the process is still localized, with an irritation and not an infection of the spinal fluid, that the most successful treatment can be hoped for. The diagnosis having been made, the localized focus of infection must be removed, and this can only be done by surgery. If a mastoidectomy has already been done, further exploration of the wound is demanded. The infected area must be drained directly. Whether an exploratory craniotomy should be attempted must be decided in each individual case by the otologist. Swift(7) advocates this step whenever necessary, feeling that exploratory craniotomy is not a dangerous procedure *per se*. Hasty(8) however, is far more conservative and voices the feeling of many surgeons when he says, "I have a very wholesome respect for intradural exploration of the brain in the presence of mastoid disease, and but for very good reasons only would I advise such a procedure." Personally we tend to the latter view. Negative culture of

the spinal fluid presupposes that the infectious process is still localized by protective adhesions. Why disregard this and open the dura in a wound which is admittedly infected?

Following operative procedure, transfusions, one or several, are often of greatest help, at times life-saving—we felt this to be true in one of our cases. Some workers have used mercurochrome intravenously but reports are not enthusiastic. Repeated lumbar punctures, in the presence of a persistently cloudy spinal fluid, are often advantageous.

In addition to the steps mentioned above, Eagleton suggests, in very resistant cases, putting the parts at rest by ligation of the internal carotid on the affected side. He also suggests transfusion with blood from an immunized donor.

The prognosis at best is poor. The most favorable cases are those in which the meningitis is detected very early in an acute or chronic mastoid. Kopetzky states that the prognosis is best in those cases in which the primary infection of the meninges is through the dura of the middle cranial fossa; the poorest outlook in those in which the extension has gone through Trautmann's triangle, the sinus, or the inner plate of the supra-sinal cells. Early diagnosis, early and extensive removal of the infected area—furnish the greatest hope in the treatment of sympathetic meningitis. The treatment of these cases brings very sharply to the forefront the otologist's responsibility in the care of cases of continued sepsis in acute or subacute ears. Some otologists of note set a definite time limit beyond which they will not allow an ear to suppurate without resort to mastoidectomy. Symptoms significant of danger in these types of cases are: pain, indicative of fifth nerve neuralgia, a low grade temperature and night sweats, plus the continued discharge. On the other hand, the discharge may cease, the drum heal and the fundus picture return to normal and yet the infected focus remain latent in the mastoid, particularly the petrous pyramid, giving rise later to symptoms of a basilar meningitis. An illustration of this occurred in the practice of one of the writers. He incised a drum to relieve an acute ear infection in a woman whom he did not see again

for a year. After the lapse of this time she came in suffering from very severe pain above and behind the eye on the same side as the previously infected ear. The fundus of the ear was entirely normal as was her hearing. There was no vertigo. However, X-ray of her mastoid showed bone destruction. Mastoidectomy was done immediately, but the patient unfortunately developed a purulent meningitis. At autopsy, the original focus was found to be in the cells of the apex of the petrous pyramid.

The pediatrician in his treatment of many cases of otitis media very frequently sees the meningeal signs first. A thorough understanding and sympathetic co-operation between the pediatrician and the otologist is essential.

Two cases are herewith presented. One of these followed an acute otitis media, one a chronic mastoid. Both were seen very early, one by the otologist and one by the pediatrician. Both were operated upon early and both recovered. Rather coincidentally, the two cases were admitted to the hospital within seven days of each other.

Case 1. Boy, age 8, white. History of right ear suppuration for past six years. Mastoidectomy had been advised but refused by the parents. One week prior to admission patient had an attack of vertigo and fell to the ground. The vertigo persisted. Patient began having excruciating headache above and back of right eye, and developed a high temperature. On admission there was a definite rigidity of the neck and very positive bilateral Kernig. There was a fetid discharge from the right ear. No pain or tenderness over mastoid. Immediate lumbar puncture was done; the spinal fluid was cloudy and came out under considerable pressure. Cell count was 4,000, 95 per cent polymorphonuclears. Globulin was increased and sugar decreased. On smear, gram positive bacilli, with spores, were found but culture proved negative. Following mastoidectomy, the meningeal signs cleared up rather rapidly, and lumbar puncture, performed one week after operation, revealed a clear, sterile fluid with only 250 cells. He was discharged from the hospital ten days after operation.

Case 2. Girl, 6, white. No prior history of ear trouble. Following an acute respiratory

infection, patient complained of ear ache, right, in the middle of the night. Drum ruptured before otologist could be reached. On examination of the ear there was a small perforation in Shrapnell's membrane, through which was coming a serous discharge, under considerable pressure. Under chloroform analgesia, a liberal incision was made in the drum. The discharge continued profuse, and there was marked elevation of the temperature. Leukocyte count 16,000, 78 per cent polys. X-ray of mastoids showed processes of the pneumatic type, with the right side showing a faint, diffuse haziness. No bone destruction. Patient developed severe frontal headache, slight rigidity of the neck and a weakly positive Kernig. Spinal puncture showed a slightly turbid fluid, under increased pressure. Cell count 2,000, increased globulin, decreased sugar. Direct smear and culture negative for organisms. Immediately following lumbar puncture, mastoidectomy was done. Following the operation, the meningeal symptoms subsided, but the patient ran a very high, septic type of temperature, and it was thought possible that a septicemia had developed although the blood culture was negative. She was transfused twice. The fever gradually subsided and she was discharged ten days after operation, in good condition.

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#### DISCUSSION

Dr. J. W. Jersey, Greenville:

This is undoubtedly a subject of very great importance, not only to the otolaryngologists but to men who are practicing in diseases of children and to the internists and to the neurologists. It is an excellent paper that Dr. Mobley and Dr. Price have presented, and I am only sorry that more people are not present to hear what they have to say.

It is very true that the treatment of these conditions lies in the prevention of them. Once a real purulent lepto meningitis has developed, nothing can be done beyond what nature herself does, unless it be the possibility of reopening a mastoid wound and clearing up any additional source of infection. An old personal friend of mine, Dr. Wells Eagleton, with whom I have talked on the subject many times, has tried for years in some way to counteract the dreaded infection. He has used all sorts of methods, all sorts of means of irrigation through the subarachnoid space, through the spinal column; but in no instance except two has he ever gotten any results, out of hundreds of times; and those two, he admits, were cases probably of the exudative type, which nature probably would have taken care of anyhow.

Now, I think I have a little better classification of meningitis following aural infections than Dr. Mobley and Dr. Price have offered, a simple one and, I think, one more easily understandable by the men in general practice. First, I would say the condition of meningismus I dismiss entirely from the discussion. I do not consider that a meningitis. What remains is, first, a serous or sympathetic meningitis, which is not carrying with it a bad prognosis. It is not a condition that we might fear. The second is the purulent meningitis, which affects the arachnoid and the pia mater and which can be divided into two classes: the exudative type, which is not necessarily fatal, and the purulent type, which is virtually hopeless from the beginning. The great trouble we are up against is how we are going to distinguish, when we know we have a meningitis, between the serous type and the purulent type. Clinically it can not be done; symptomatically it can not be done. A serous meningitis gives you all the classical symptomatology, all the classical symptoms, that the most virulent type of suppurative meningitis will. There is only one possible chance, and that is in the laboratory, by the examination of the spinal fluid. There, again, I disagree to a slight extent with Dr. Mobley's conclusion. The spinal fluid in the serous type is often cloudy; and in the purulent condition (and I may say that in a serous meningitis the spinal fluid is under just as much pressure) it is just as or more cloudy; it may have thousands and thousands of cells to the c. c.; and in every way except

in the absence of bacteria and the presence of the copper-reduction test it can not be differentiated from the purulent type. But what good is that going to do you? If you have already decided that you have a mastoid infection and have decided to clear out the infected area, why subject your patient to a lumbar puncture? Better wait; for, after all, you have done all that can be done. You are merely gratifying your curiosity and adding another, even if slight, danger to your patient.

At the present time what seems to offer the best promise in the treatment of these cases is the intracarotid injection of Pregl's solution.

Dr. William Weston, Jr., Columbia:

I hate to disagree with my friend, Dr. Jervey, but I think when a patient presents himself with a positive Kernig, a positive Brudzinski, and, in a child able to talk, with a headache, then there is no other way to tell whether it is meningismus or a meningococcic infection than by doing a lumbar puncture, and I think it should be done early. There is one condition in which it might be contra-indicated, and that is brain tumor, but we see few of those, and ninety per cent of those die, anyway, so there is very little harm there.

I think in any case of meningococcic meningitis, if we are going to use serum, then more fluid should be taken out than is going to be replaced. If not, that is conducive to blockage. I should like to emphasize the use of occipital puncture. When there is blockage in the lumbar region, there may not be in the occipital region.

#### PRIMARY PULMONARY CARCINOMA

By Hillyer Rudisill, Jr., M.D., F.A.C.P.\*

(I)

In spite of the fact that Bayle(1) first described primary pulmonary carcinoma in 1810 there were only a few cases reported until the last decade and a half of the present century. Menetrier(1) in 1910, that is exactly 100 years later, reported only 6 cases of primary lung carcinoma in 2,500 autopsies.

In the last several years there have been so many cases of "lung cancer" reported there is considerable discussion and a little excitement about the rapid increase in the condition.

It has been well established that inhalation of certain irritant materials may cause "lung cancer." This has been strikingly demonstrated in the cobalt mine workers of Schneeberg Saxony. The high incidence of primary pulmonary carcinoma in these miners, 71 per cent

of the total deaths in a carefully studied 3 year period(2), has caused the condition to become known as the "Schneeberg Lung" in that part of the world.\*\*

Because of this apparently conclusive proof that lung cancer may be caused by inhalation of cobalt and pitchblend, at least two of the severally given causes of its increase may be important. One, the irritating effect of the smoke and fumes of this so called "gasoline age," and secondly, the prolongation of life of so many individuals with chronic lung disease. In either case the wear and tear of the lung may be just the chronic irritation needed to produce cancer on the same basis as it is produced by chronic irritation in other parts of the body.

While it is not to be doubted that all cancer is increasing, since modern medicine is preserving more people to the cancer age, it is a reasonable assumption that part of the un-natural increase in lung tumors is because of better diagnosis; both ante and post mortem.

Obviously improved and wider use of the x-ray in chest examination with direct inspection and biopsy of suspicious lesions with the bronchoscope have increased the ability to diagnose "lung cancer." Several of the recently reported cases have occurred in tuberculous areas or an abscess, and have only been diagnosed after microscopic examination by a competent pathologist.

Because of this necessity for microscopic examination to make the diagnosis in a certain number of cases, the statistics of incidence in older pathological series must be taken with the proverbial "grain of salt." Careful routine examination of tissues removed at autopsy has been done for only about 25 years in the teaching institutions and has come into general use in the last 10 or 12 years.

How much primary pulmonary carcinoma is actually increasing is not so important as the fact that the condition can no longer be considered as rare and a medical curiosity.

The x-ray classification of primary pulmonary carcinoma must be based entirely on the

\*\*Although lung cancer has not been as carefully studied the workers in the pitchblend mines in Joachimstahl Bohemia have a high incidence.

(Continued on Page 24)

# TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

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No. 1

Emotion that remains bottled up exerts a harmful physiological influence, especially so on the tuberculous person. Unfortunately, he cannot work off his emotions or shift his interest to another scene. The disease itself inevitably brings about emotional strains involving business relationships, breaks in family ties, and financial worries. In his segregation and enforced leisure the patient broods—and his problems become emphasized and distorted. To adjust the patient's state of mind is an essential therapeutic requirement in the "cure." Mary B. Eyre has studied the role of emotion in tuberculosis from the psychological approach. Her findings, presented at the latest annual meeting of the National Tuberculosis Association, are here briefly summarized.

## THE ROLE OF EMOTION IN TUBERCULOSIS

The human organism responds as a whole to its internal and external environment. We need not separate mind and body (much less soul and body), but regard the human individual as trying to get along with the use of all of his functions, endowment, and experience.

His functions include not only his feelings, but the use of his brain. Stirred-up feeling is known as emotion, and implicit in emotion is *energy*, which is always dynamic. The individual who experiences emotion is therefore *ready to Act*. Researches have demonstrated that the sympathetic division of the autonomic nervous system, through the adrenal glands (and possibly other tissues), prepares the body for activity at the same time that the individual is under emotional stress. If the discharge of this energy should not take place, then the preparatory processes become disturbers and disrupters of the organism.

Each one of us needs at least to feel safe. Anything which menaces our bodily, mental, or financial security, sets up at once a state of

tension, which disintegrates our assembled forces in fronting our world. In the weak and timid person, he who has never learned self-reliance or known what it means to think well of himself by reason of success due to his own efforts, *the sense of his inadequacy* is always his first response. To tell him "not to worry" and to "control his emotions," far from helping, usually increases his tension without showing him how to release it. Something detrimental does happen to all responses of the individual, through worry; something beneficial takes place as inevitably through the building up of the sense of security. Metabolic rate of plus 124, with pulse rate of 112, was changed to basal rate of minus 3, pulse 72, within twenty-four hours, in an individual whose anxiety over her financial safety was relieved meanwhile.

Of all the emotions, fear seems to be the



Optimism, based on confidence, is a therapeutic asset

predominating one. The characteristic optimism which is generally attributed to tuberculosis was found in a number of observed tuberculous patients to be compensatory to an underlying fear and dread of non-recovery, which they resolutely refused to admit to themselves or to acknowledge to others. Is the hopeful state observed in many tuberculous patients due to a specific toxin of the tubercle bacillus?

It is more simply explainable by the defense mechanism aroused by fear, super-imposed upon the general biological stimulation which is the body's reaction against this bacillus.

#### MEASURING EMOTIONAL STATES

Even though measures of precision have not yet been evolved for emotional states, it is a step in the right direction to assemble the evidence, and to compare symptoms involving strong feeling, with objective physical findings. Such correspondence can be observed in the physical field, in rise or fall of temperature, in metabolic index, and in functions governed not only by the vegetative nervous system, such as digestion and elimination, but by the sympathetic division of the autonomic as well, including, as Cannon has shown, heart acceleration, respiratory change, pilo-motor reflex, endocrine activity, increased blood sugar and hormone liberation. To these may be added as possible signs, the healing or increase of cavitation, and other reparative or destructive processes of the body, as revealed by X-ray and chemical analysis.

It would seem reasonable to ask of any measures which set out to regulate emotion, that they should prove their validity by producing an effect upon the general bodily well-being of the patient.

Eighty-seven tuberculosis patients were studied. Although a complete comparison with physical symptoms was not made, it would be possible to check the records of emotional behavior with the accurately kept physical histories. The net results of this study, based on the answers to four inclusive questions, were in terms of social adjustment.

Fear was found to be the chief factor in emotional instability, present, to some detectable extent, in all but two instances. One of these was a patient who had been told that as "a light case" she would be ready to go home, as soon as she recovered from an appendectomy which had brought her to the acute unit. Her attitude was quietly relaxed, without tension of any sort, either of marked cheerfulness, stoicism, or depression. It was almost startling to find a patient who felt no need of any form of defense against fear.

No adequate explanation can be offered for

changes in temperature which accompany emotional excitement, or its release, other than the relationship between the autonomic nervous system and endocrinial activity. Cannon points out that homeostasis of body temperature is regulated in part by the sympathetic, which also influences the output of adrenal and thyroid and pituitary glands, the governors of muscular tonus, and, indirectly, oxygen intake. Muscular action results in heat production, which warms the blood; shivering, pilo-motor reflex, and sweating, are all heat regulating devices directed by the sympathetic, which also responds to emotional excitement, of either sudden or long continued duration. Thus the whole mechanism is in such delicate adjustment, that change in any factor could presumably cause imbalance.

#### RE-EDUCATING THE EMOTIONS

Outlets must satisfy the inmost aspirations of the individual, and carry on his energy in channels appropriate to his needs. It is not enough merely to tell him to "work off" his excess emotion. It must be used creatively after his heart's desire, in some fashion.

Dr. Cannon points the way physiologically, by showing the disrupting effects upon an organism prepared by emotion for violent action, if the physical action be deferred or prevented. He stops at that point. The principle can be carried further, to provide adequate means by which the excited organism *can* find use for the energy which it is prepared to expend, through interests fitted to its intellectual level.

To warn a patient against giving way to his feelings, without showing him how to bring about this control, is but to increase his strain; just as to beg him when in great bodily fear, "not to be afraid," usually augments his terror.

Re-education of the patient, in the sense of helping him to understand the sources of his emotional stresses in order that he may know how to re-route their component energy, is the most practical therapeutic aid for the emotional problems of tuberculosis. The individual must first be helped to face his difficulties, and to identify the feeling-habits in himself (usually dating back over long periods) which led to his failure; he must be shown how to substitute

new feeling-habits, which will lead to better adjustment; how to rely upon himself, and become emotionally grown up; and finally, how to find adequate constructive outlets for his emotional energy. In bed patients, these outlets must necessarily be through mental instead of physical channels.

Optimism that is based on confidence in the recuperative powers that are within the organ-

ism, is a different thing from the defense against fear, and is a tremendous asset which therapeusis cannot afford to overlook. If fear be faced, and not run away from by pretending it does not exist, it can be dealt with adequately.

*The Role of Emotion in Tuberculosis, Mary B. Eyre, Trans. of the Nat. Tuberc. Assn., 1932.*

## DEPARTMENT OF ROENTGENOLOGY

R. B. Taft, M. D., Charleston, S. C.

### CANCER OF THE MOUTH AND ITS TREATMENT BY IRRADIATION

*George E. Pfahler, M.D., Philadelphia, Pa.*

It is now generally admitted that cancer never begins in normal tissue. Therefore, to prevent cancer one need only eliminate any abnormal tissue. Fortunately, in the mouth a physician can easily see and feel any abnormal tissue, and in practically all instances, if the patient calls upon the physician in this early stage, the precancerous disease, or abnormal tissue can be eliminated. The physician who is first consulted, therefore, assumes great responsibility, for in the early stage, cancer of the mouth is a curable disease. His decision or indecision, his delay, dallying or the application of caustics may mean the difference to the patient, between life and death. If in doubt, a consultation with an expert or a biopsy will be helpful.

*The important factors in the causation of cancer of the mouth are syphilis, tobacco, sharp edged teeth, badly fitting plates or chronic inflammations.* Since syphilis is a causative factor in cancer, the presence of a positive serological test should not eliminate the diagnosis of cancer and cause delay in its treatment. According to my observations active antisyphilitic treatment will produce an improvement within two weeks if the lesion is syphilitic.

The precancerous disease may be shown by

leukoplakia, a sore, ulcer, fissure, wart, tumor, induration or granulation tissue. By close observation and continued practice one can recognize the appearances, and the induration or infiltration that goes with cancer. The greatest characteristic of cancer is infiltration. The precancerous lesions can be successfully destroyed by electro-coagulation. Formerly, it was my practice to destroy the cancers also by electro-coagulation, but on account of the danger of not getting all of the disease by that method I am convinced that treatment by radium is preferable. In the process of repair after incomplete destruction growth may be stimulated or disseminated.

If cancer is present or if there is suspicion of cancer, it is my practice to give immediate irradiation, to the lesion, to the neighboring parts and to the adjacent lymphatics, and then do a biopsy and follow with more irradiation to the limit of normal tissue tolerance. When desirable, one can obtain a microscopical report on a fixed specimen within 24 hours, and if the lesion is not malignant no more irradiation will be needed. The preliminary irradiation will serve to produce a better scar.

Well established cancer about the mouth is always a serious problem, because of the metastasis which is likely to be present. No two cases can be treated alike, for no two grow alike, but in general it must be our aim to destroy the visible and palpable disease by local surface applications of radium, by insertion of radium needles, or radon seeds, and when much

\*Submitted for publication by request of the Editor of this Department.

local fibrous tissue is present by local destruction with electro-coagulation.

For local surface applications, we use radium in capsules, filtered through two millimeters of platinum, and give locally or inside the mouth, from 1200 to 3000 milligram hours at a distance of from 3 to 5 m.m.

When interstitial irradiation seems necessary, we prefer to use radium element in small quantities (1-2 mg.) in platinum irridium needles of a filter value of 1 mm. lead and leave them in place from 4 to 7 days. We also prefer to insert such needles through the skin which can be sterilized. It is not always possible to choose the skin, and it is not always possible to give this prolonged irradiation, in which cases we use 10 milligram needles for a shorter time. One must adapt the treatment to the conditions present, just as the surgeon must adapt his operation to the conditions present.

*The presence or danger of metastasis* is always our most serious problem, and no matter how simple the local treatment may seem unless the greatest care is given to the treatment of the lymphatic drainage many failures will result. If actual cancer is present, we always irradiate the lymphatic areas to the limit of skin toleration.

For the effect on the lymphatics we prefer the use of radium packs. We usually apply from 100 to 150 milligrams on each side of the submaxillary regions, side of the face and neck at from 4 to 5 cm. distance. These applications are made in 24 hour periods, upon wax molds, felt or sponge rubber, and from 40 to 60,000 milligrams hours are applied within three or four weeks with the irradiation filtered through 2 millimeters of platinum, or the equivalent of 4 mm. of lead.

When radium is not available, we believe that the next best treatment is with high voltage x-rays filtered with 2 mm. of copper and carried to the limit of skin toleration, as recommended by Coutard, and as practiced by me in the "Saturation Method."

When palpable lymph nodes are present, we give surface irradiation as above, and unless there is some reduction after about two weeks we insert radium needles directly into the

lymph nodes to increase the local effect. Only rarely does it seem advisable to resect these lymph nodes, and only when they are large and movable. When the lymph node has been fixed to the surrounding tissues I have never seen recovery following excision. Such lymph nodes or metastasis are difficult to overcome by any means but according to my observations the best results are obtained by local insertion of radium needles and associated with radium packs and at times with high voltage x-rays filtered through two millimeters of copper.

By means of the most modern methods we obtain about 35 per cent cures when all cases are counted as they come. This must not be compared unfavorably with surgical methods, when only operable cases are counted. We must all do our best to increase the recoveries by treating the precancerous and early cancerous lesions thoroughly and skillfully when I believe 75 percent can be gotten well.

The following table indicates the results obtained in a recent review of our cases treated by the modern methods.

#### RESULTS BY PRESENT TECHNIQUE IN UN-SELECTED CASES OF CARCINOMA OF THE MOUTH, BOTH EARLY AND ADVANCED\*

	Cases	Well	Duration
Tongue and			
Floor of Mouth	70	22 - 31.4%	1 - 6 years
Cheek	34	20 - 58.8%	1 - 7 years
Tonsil	15	4 - 26.6%	6mos.3 years
Lower Jaw	27	9 - 33.3%	1 - 7 years
Upper Jaw and			
Roof of Mouth	25	12 - 48.0%	1 - 7 years
Total	171	67 - 39.2%	

#### CASES WITH PALPABLE LYMPH NODES

	Cases	Recoveries
Tongue and Floor of Mouth	89	16
Cheek	19	7
Tonsil	19	4
Lower Jaw	20	6
Upper Jaw and		
Roof of Mouth	10	4
Total	157	37—23.5%

\*These cases are taken from the records in Dr. Pfahler's private office (where 1250 milligrams of radium are in use) and from the Graduate Hospital (where through the courtesy of Col. Louis J. Kolb, 1250 milligrams of radium are available).

## SUMMARY AND CONCLUSIONS

—Cancer of the mouth is for the most part a preventable disease, by eliminating infections and irritation.

2—Precancerous lesions should be accurately diagnosed and eliminated.

3—Cancer of the mouth should be curable in 75 percent of the cases if treated thoroughly and skillfully from the beginning of symptoms, and in 50 percent of the cases as they now come to the physician, but as they now come under expert care they only yield about 35 percent of cures.

I have been requested to make this article brief. Other details may be obtained from previous publications.\*

\*PFAHLER, G. E.: Brit. Jour. Radiology, 1926, 31, 45-58. PFAHLER, G. E.: Amer. Jour. Roent. and Rad. Ther., 1928, 20, 233-241. PFAHLER, G. E.: Proceedings of the International Conference on Cancer. July, 1928. Published by the British Empire Cancer Campaign, London. PFAHLER, G. E.: Amer. Jour. Roent. and Rad. Ther., June, 1930, Vol. 23, 633-638. PFAHLER, G. E. and VASTINE, J. H.: Jour. Amer. Med. Assoc., 1931, 96, 664-669.

## SOUTH CAROLINIA

Everyday Psychiatry. Sylvia Allen, Rock Hill. So. Med. & Surg. 94 Oct. 1932, 650.

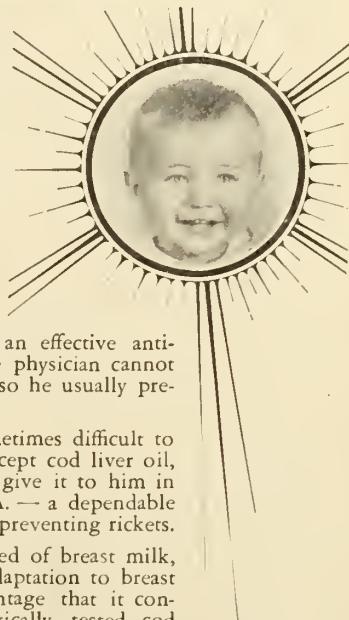
Dr. Allen stresses and illustrates the value of everyday psychiatry to every practitioner, and notes the importance of the development of psychiatric education in this country. Admitting that psychiatry is still in a relatively uncertain state, she finds in this incompleteness a stimulus to the study and development of a more satisfactory science of explanation of human behavior.

Otomycosis, A Clinical Consideration. W. J. Bristow, Columbia. Ann. Otol. Rhin. & Laryng. 41 June 1932, 578.

The author finds otomycosis fairly common. Fungi produce a mass resembling wet paper or cotton in the external ear, causing obstruction. Previous use of medication seems to predispose to the growth of the fungus. Three per cent alcoholic solution of salicylic acid, aided by iodides internally, is usually curative.

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## PRIMARY PULMONARY CARCINOMA

(Continued from Page 18)

mechanical features of the involvement and each type must be differentiated from other conditions of the same mechanics and identical x-ray appearance.

*Roentgenographic Classification of Primary Pulmonary Carcinoma*

This is a modification of the classification given by Stivelman (4).

- I. Collapse, lobar or massive
- II. With consolidation, lobar or diffuse
- III. Hilar nodular, giving the appearance of massive glandular enlargement.
- IV. Excavating, resembling a chronic abscess and usually the result of a secondary infection.

Because of this similarity in the x-ray appearance to various other non-malignant pulmonary diseases it is usually impossible to make a purely x-ray diagnosis. This is particularly true when there is collapse or consolidation. Occasionally in the hilar nodular form the growth is so distinct in appearance that a reasonably safe x-ray diagnosis may be made. Whenever any of the before mentioned appearances are obtained in a patient that is clinically suspected of lung malignancy from the chronicity and lack of other diagnostic features it is frequently safe to assume a lung cancer is present. Repeated x-ray examinations in which the lesion appears stationary or very slowly progressing will of course tend to confirm this opinion. If possible a biopsy by bronchoscope or at least a bronchoscopic inspection should be done as soon as a primary lung carcinoma is suspected.

In either a pathologically confirmed diagnosis or a suspicious x-ray appearance with clinical substantiation, the next consideration is the logical method of treatment.

The treatment may be divided into two large classes, surgery and radiation.

It is occasionally possible to remove a small endo-bronchial growth with an operating bronchoscope, and some surgeons have reported successful treatment by lobectomy. Nevertheless in the majority of cases surgical procedures are either unsuitable or unavailable and

the treatment resolves itself into radiation.

From reported results (6) it seems that with ordinary X-Ray therapy, as used for abdominal malignancies, most of the primary lung cancers may be temporarily arrested, many will regress, and occasionally a "cure" seems to be accomplished. The most pessimistic radiologists feel that adequate deep therapy offers a sufferer from one to three years of additional comfort and life.

Recently Pancoast and Pendergrass (7) have reported a successful method of implanting radon seed directly into endo-bronchial tumors. With direct radiation into the tumor it is quite possible that many more primary lung cancers may be "cured," providing the diagnosis is made early.

*Summary:*

An increasing number of primary pulmonary carcinomas are being seen. This is due to both better diagnosis and some actual increase in the condition.

As in most internal malignancies the proper combination of surgery and radiation offers palliation and comfort to many, with added years to their life. A questionable but increasing percentage of arrests ("cures") in early diagnosed cases may be expected from the improving technic of both surgery and radiation.

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## MINUTES

### MINUTES OF HOUSE OF DELEGATES (Concluded)

Dr. G. T. Tyler, Greenville, spoke of the work done during the last year in establishing tuberculosis clinics at State Park, the committee last year having had a two-day clinic at State Park attended by thirty-seven physicians from over the state. Dr. Tyler stated that this year it is planned to have a number of clinics at different points—one at State Park on May twenty-sixth, also one at Pinehaven and one at Greenville.

Dr. Marion H. Wyman, Columbia, Chairman of the Local Committee on Arrangements, made some announcements about the coming meetings and social features and called attention to the commercial exhibits and the scientific exhibits.

Dr. Hugh Smith, Greenville, on behalf of the Greenville County Society moved that the House of Delegates memorialize the American Medical Association to reduce the subscription price of the Journal of the American Medical Association back to five dollars, its former price, from seven dollars. This motion was duly seconded and was carried.

Dr. Carl B. Epps, Sumter, offered the following resolution and moved its adoption:

Resolved, that the House of Delegates of the South Carolina Medical Association is fully appreciative of the great importance of the State Board of Health of South Carolina and of the good that it has done and is now doing. When we consider, however, the present extremely distressing financial condition of the people of our state, and find that appropriations for the State Board of Health have increased almost five hundred per cent in eight years, from 1922 to 1930-1931, we believe it the part of wisdom to inquire whether or not these expenditures can be decreased without seriously affecting the health of our people.

Therefore, without casting any reflection what-

ever upon the present or past personnel of the State Board of Health, be it now resolved that a committee of five members be appointed by nomination from the floor at this meeting, each member to be a member of the South Carolina Medical Association, and that the duties of this committee shall be to meet at such times and places as they may decide, and consider the matter of recommending reductions in the State appropriations to the State Board of Health of South Carolina, and report back to the House of Delegates next year.

The motion was seconded, and the matter was discussed by Dr. R. S. Catheart, Charleston, who moved to lay it on the table. The motion to table received several seconds and was carried by a vote of forty-eight to four.

Dr. W. E. Simpson, Rock Hill, offered the following resolution, which was unanimously adopted:

WHEREAS it is important, in the interest of the health of the people of this State, individually and collectively, that the Medical College of the State of South Carolina be adequately supported and preserved as a class "A" institution, and

WHEREAS a sufficient appropriation for this purpose is sound economy and is not such as to impose a burden on the people, and

WHEREAS the recent reduction of this appropriation, although small in amount, is sufficient to jeopardize the good work of the College; now therefore be it

RESOLVED, that the South Carolina Medical Association in convention assembled, respectfully recommends to the next General Assembly the provision of an adequate appropriation for this college, and does hereby delegate to the President of the Association the duty of presenting this Resolution and preamble in person or by representative to the Budget Commission, the Ways and Means Committee of the House of Represen-

tatives, and the Finance Committee of the Senate, at appropriate times in the next annual General Assembly.

At the request of Dr. J. S. Rhame, of Charleston, Secretary Hines read the resolution incorporated in the report of the Delegates to the American Medical Association, in regard to the Federal Government's policy of rendering medical and hospital benefits to veterans of the World War with non-service-connected disabilities, etc. At the further request of Dr. Rhame, for information as to the action of other state medical societies on this resolution (which was presented for adoption at the last meeting of the American Medical Association), Dr. Hines stated that so far as he had been able to learn they had approved of it, and that the resolution will be brought up again at the New Orleans meeting of the American Medical Association.

After discussion by Dr. J. H. Cannon, Dr. W. P. Timmerman, Batesburg, moved that a committee be appointed to consider the matter. Dr. J. M. Beeler, Spartanburg, offered an amendment (accepted by Dr. Timmerman) to this motion providing that such committee shall cooperate with the Tri-State Hospital Association of North and South Carolina and Virginia. The motion, as amended, was seconded. The matter was discussed by Dr. E. A. Hines, Secretary; Dr. A. W. Browning, Elleroy; Dr. Kenneth M. Lynch, Charleston; Dr. J. S. Rhame, Charleston; Dr. Timmerman; Dr. C. B. Epps, Sumter; Dr. A. P. McElroy, Union; and Dr. Hugh Smith, Greenville. The motion was adopted.

On motion of Dr. Douglas Jennings, Bennettsville, amended by Dr. D. L. Smith, Spartanburg, and Dr. C. B. Epps, Sumter, the Secretary was directed to send a message conveying the best wishes and regards of the House of Delegates to Dr. Frank H. McLeod, Florence; Dr. L. O. Mauldin, Greenville; and Dr. H. L. Shaw, Sumter.

Secretary Hines stated that he had received several invitations to hold the meeting next year in Spartanburg. On motion of Dr. T. M. Davis, of Greenville, it was voted to meet in Spartanburg

in 1933.

#### Election of Officers

The following nominations to the office of President-Elect were received:

Dr. Robert E. Abell, Chester, nominated by Dr. Hugh Smith, Greenville; seconded by Dr. C. F. Williams, Spartanburg.

Dr. William Egleston, Hartsville, nominated by Dr. M. R. Mobley, Florence. Seconded.

Dr. Abell was elected.

Dr. Frank Lander, Williamston, nominated Dr. E. A. Hines for the office of Secretary-Treasurer, to succeed himself. Dr. Hines was unanimously elected.

**Councilor Second District:** On nomination by Dr. T. M. Davis, Greenville, D. S. E. Harmon was elected to succeed himself.

**Councilor Fourth District:** On nomination of Dr. W. C. Hearin, Dr. R. C. Bruce, Greenville, was elected to succeed himself.

**Council Sixth District:** Dr. Douglas Jennings, Bennettsville, was nominated by Dr. M. R. Mobley, Florence, and was elected.

**Council Eighth District:** Dr. G. M. Truluck, Orangeburg, was nominated by Dr. A. W. Browning, of Elleroy, to succeed himself and was elected.

**Board of Medical Examiners:** Dr. E. Marvin Dibble, Marion, was nominated and elected to succeed himself in the Sixth Congressional District.

On nomination by Dr. W. A. Tripp, Dr. A. Earle Boozer, Columbia, was elected to succeed himself as member from the state at large.

**Delegate to American Medical Association:** On nomination by Dr. T. M. Davis, Greenville, Dr. J. H. Cannon, of Charleston, was re-elected.

Dr. J. S. Fouche, of Columbia, was elected alternate.

**Delegate to Medical Association of Georgia:** Dr. L. H. McCalla, of Greenville, on nomination by Dr. R. C. Bruce, Greenville, was elected as delegate to the Medical Association of Georgia.

There being no further business to come up, the House of Delegates adjourned *sine die* at eleven o'clock p. m.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "GANGRENE OF THE FINGER FOLLOWING DIGITAL NERVE BLOCK ANESTHESIA"

In operations upon the distal half of the finger anesthesia is usually obtained by the injection of novocain at the base of the finger followed or preceded by the application of a

tourniquet. The purpose of the tourniquet is to prevent the rapid absorption of the novocain and to lessen the bleeding. This is such a common procedure that very little thought is given to it. That it is not altogether without danger is pointed out by Dr. John H. Garlock of New York, Annals of Surgery Vol. 94, pg 1103, December 1931.

The author has had in the past two years in his own practice four cases of gangrene of the finger following just such a procedure. The gangrene appeared in 24-48 hours. In every case amputation was necessary. An organizing thrombus was found in the arteries. In two cases some of the vessels were not involved so that the line of demarcation was uneven. All of the cases gave a history of having had a catheter or rubber band tourniquet tightly around the base of the finger for about one-half hour. There was no evidence of infection from unsterile novocain.

The effect of the tourniquet is a slowing of the blood stream and an injury to the intima of the vessels. Thrombosis takes place and gangrene ensues.

The lesson to be learned from these cases is the danger of using a tourniquet, especially of narrow calibre, on the fingers and no doubt also the toes. It is not necessary in order to obtain satisfactory anesthesia. Should a bloodless field be required, it is safer and more effective to use an Esmarch bandage properly applied.

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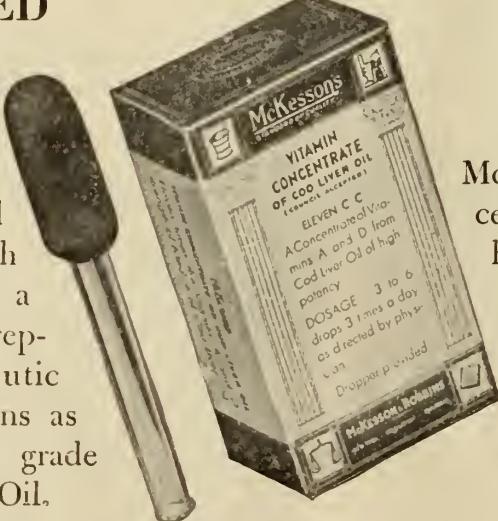
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# The Journal of the South Carolina Medical Association

VOL. XXIX.

GREENVILLE, S. C., FEBRUARY, 1933

NO. 2

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# The Journal

## OF THE

# South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

EDGAR A. HINES, M.D., F.A.C.P., Editor-in-Chief, Seneca, S. C.—EDGAR A. HINES, Jr., B.S., M.D., Rochester, Minnesota, Assistant to the Editor

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### EDITORIAL

#### THE COUNCIL HAS IMPORTANT MEETING

The Council of the South Carolina Medical Association met in Greenville, Tuesday, February 14 and was presided over by Dr. S. E. Harmon of Columbia. The majority of the members of the Council were present including, President J. R. Young of Anderson and President Elect R. E. Abell of Chester.

Many matters of importance were discussed by the Council, chief of which was the different phases of economics as affecting the practice of medicine in South Carolina. The members of the Council have given serious attention to this situation and are in position to advise with County Medical Societies as regards their respective problems.

The Secretary Editor of the State Medical Association submitted a preliminary report of the finances of the Association and Journal and it was gratifying to note that there has been only a slight loss of membership, most of

which will be made up by the time the Association meets in Spartanburg. The Journal has continued to function in a satisfactory way notwithstanding the serious economic situation throughout the country which has affected practically all such publications.

County Medical Societies should invite their respective Councilors to visit them in the short time remaining between now and the State meeting in the event they have not done so already.

#### SOUTHEAST SURGICAL CONGRESS

One of the most dynamic medical conventions to meet in the South this year will be that of the approaching Surgical Congress in Atlanta, March 6 and 7. A large number of the members of the South Carolina Medical Association are interested in this comparatively new organization. The program is outstanding in its appeal and we bespeak a large at-

tendance from this State. There will be many special features including a program of extensive clinics. Atlanta is a great medical center and when they attempt to entertain a medical meeting it turns out to be an inspiring and helpful event to every doctor present.

---

#### PROGRAM FOR SPARTANBURG MEETING ABOUT COMPLETE

The South Carolina Medical Association which meets in Spartanburg April 18, 19 and 20 bids fair to equal if not surpass any of its predecessors. The various committees have done their work well and the arrangements including the scientific program itself are well nigh completed. The provisional program will be published in the March issue of the Journal. One feature has never quite reached the mark desired, that is, scientific exhibits. We wish to urge those who are in position to assist the Spartanburg committee in this respect to write at once to Dr. D. L. Smith, General Chairman of the Spartanburg Committee. The Cleveland Hotel will be headquarters.

---

#### DR. F. B. JOHNSON OF CHARLESTON PRESIDENT ELECT OF THE TRI-STATE

One of the beautiful tributes to the outstanding ability and scientific attainments of a distinguished South Carolina doctor was that of the elevation to the Presidency of the Tri-State Association of the Carolinas and Virginia of Dr. F. B. Johnson. We believe this is a well deserved recognition of one who's influence as a medical teacher is in large part responsible for the high stand of the younger generation of South Carolina doctors who have graduated from the Medical College in Charleston. Dr. Johnson has been Director of the Clinical Laboratories and Professor of that branch in the Medical School for a long time. He is a Fellow of the American College of Physicians and a member of many other learned societies. His writings have been of a high order and are so recognized throughout the country.

#### THE LEGISLATURE AND ITS INFLUENCE ON MEDICAL PROGRESS

The so-called economy legislature is now in session. At the present moment the chief concern of the medical profession in South Carolina is the attitude of this body towards our educational institutions, notably the Medical College. As the appropriation now stands the Medical College will suffer tremendously in the event that this appropriation cannot in some way be increased. We wish to emphasize the necessity for every doctor in South Carolina taking up the matter personally with his delegation and explain the whole situation with reference to the demands of medical education for the highest type of teachers. Our State Medical School is probably run more economically now than any other Class A medical college in the United States. More than half of the doctors in this State received their training there and doctors are decreasing in this State in numbers every year. We have now a lower ratio of doctors per population than any other State in the Union. It is readily seen that a good medical school maintained at a high level is one of the most important considerations before us at the present time.

The legislative program for health activities very likely can stand some modification in certain phases of its work without serious consequences. It cannot be denied that the Legislature in general has done a great deal for the health of the people of South Carolina. The results have been worthwhile in a lowered mortality and morbidity. The State continues to appropriate considerable sums of money as a result of the encouragement of these statistics. In this matter also the medical profession is in position to render a great service to the people by talking over with their respective delegations the needs of public health. It is back home and in the hands of the family doctor very frequently that the best work is done when it comes to making a real impress on the minds of our representatives.

We would not forget the great work done by our Food Research Laboratory and the Natural Resources Commission. Both have attracted the attention of scientists in various parts

of the world. The economic stability of our State has been and will be tremendously enhanced if we are enabled to keep these institutions as they are.

### OUR DEPARTMENTAL EDITORS

In recent months our Associate Editors have contributed some very valuable abstracts and comments on current scientific problems. We bespeak a careful perusal of their contributions as they come out each month for they give a great deal of time and thought to them. One of our rather recent additions to the Journal has been the National Tuberculosis Association abstracts. Elsewhere in this issue there is one of more than usual significance for it outlines in a very clear cut manner the relationship of economic changes to the health of the people and particularly in the domain of tuberculosis.

### OUR COUNTY AND DISTRICT SOCIETY OFFICERS

The Secretary's office is now in possession of practically all of the names of the new officers of the constituent societies for the year 1933. In looking over the list we are impressed with the high type of officials who will have charge of the programs for the coming year. We have observed a marked cooperation in the county societies in respect to the building up of attractive programs not only of the local men but of many other men throughout the State. The invited guest has now become a fixture on nearly every program. In South Carolina with one of the finest sys-

tems of roads in the world and a compact State the addition of a visitor from even the remotest corner of the State is readily accomplished. We do wish to urge however that the membership in every society regardless of how small it may be continue to contribute liberally to their own programs. In no other way will the individual member be able to profit to the same extent by his membership in the society.

### TEXAS EDITOR APPRECIATES OUR EDITORIAL

We are grateful for the following letter from our able editorial confrere in the Southwest:

State Medical Association of Texas

Fort Worth, Texas  
February 1, 1933

Dr. E. A. Hines, Editor  
Journal of the South Carolina Medical Association  
Seneca, South Carolina

Dear Dr. Hines:

We have clipped the editorial on the reports of the Committee on the Costs of Medical Care, in your December, 1932 number, for circulation among the members of our Executive Council. If you can spare replacement, please let us have the additional number at your earliest convenience. We would like, as a matter of fact, two.

Thanking you in advance for this favor, and offering to return the compliment when there is opportunity, I am,

Fraternally yours,  
Holman Taylor, M.D.,  
Secretary-Editor.

Medical Asso., Southern Pines, N. C.

3. Vitamins A and D—Some practical Considerations—Dr. Julian P. Price, Florence, S. C.

#### DINNER IN BANQUET HALL

4. Pediatric Urology (Lantern Slides)—Dr. Hamilton W. McKay, Charlotte, N. C.

5. Hypothyroidism—Dr. William T. Rainey, Fayetteville, N. C.

6. Necessity of Rest and How to Apply It in the Treatment of Pulmonary Tuberculosis—Dr. Paul P. McCain, Sanatorium, N. C.

Dr. D. D. Strauss, Sec.,  
Bennettsville, S. C.

### MARLBORO COUNTY MEDICAL SOCIETY ANNUAL NEW YEAR'S MEETING AND BANQUET, WEDNESDAY AFTERNOON, JANUARY 11, 1933, AT 5 O'CLOCK, MASONIC TEMPLE, BENNETTSVILLE, S. C.

#### PROGRAM:

1. The Management of Skull Fractures and Brain Injuries—Dr. James R. Young, Pres. S. C. Med. Assoc., Anderson, S. C.
2. 1933 and Its Unusual Challenge to Organized Medicine—Dr. Edgar A. Hines, Sec. S. C. Med. Assoc., Seneca, S. C.  
Discussion by Dr. L. B. McBrayer, Sec. N. C.

## ORIGINAL ARTICLES

### PRELIMINARY REPORT ON THE USE OF WILLOW BARK IN THE TREAT- MENT OF MALARIA

By W. H. Zeigler, Professor of Pharmacology  
and Materia Medica Medical College of the  
State of South Carolina

#### INTRODUCTION

At the suggestion of Mr. W. H. Gibbes of Columbia, S. C. the author undertook to investigate the probable value of willow bark in the treatment of malaria fever. The facts as given to me by Mr. Gibbes thru correspondence are as follows: "I have known Jesse Thomas for over fifty years. He was a gallant Confederate soldier, severely wounded in 1863 on one of the islands near Charleston. Despite the loss of an arm he has been an indefatigable worker all his life, a true and splendid type of our best class of yeomanry. A serious word from him to me was always accepted as truth. Shortly before his death he told me of some remarkable cures of swamp fever by willow bark tea. He had learned its merits from his father. Neither knew its chemical analysis. While preparing to make some for himself he died recently when nearly eighty-nine (89) years old. His daughters confirm all he said and know of many cures. He cured a son-in-law after quinine failed."

The preparation used by them was made from the bark of common species of willow. The quantity of bark was indefinite. The bark was boiled in an aluminum container until the desired pink or almond-red color was obtained. The preparation, being a decoction, did not keep and was thrown away when it began to sour. An interesting development resulted in the attempt to make a suitable preparation. It was found that the bark of willow trees having a pinkish, rough, corky bark gave the characteristic color of the preparation used by the Thomases. The bark of other species of willow did not give the almond-red color of the Thomas preparation. The bark of the species

of willow found growing on the sides of ditches and of a low bushy variety with a pinkish bark was the kind used in making the preparation.

#### HISTORY

The willow belongs to the genus *Salix*, the species being quite numerous. The most common are the *S. alba*; *S. nigra*; *S. lucida*; *S. discolor*; *S. fragilis*; *S. purpurea*; and *S. pentandra*. The *S. alba* or white willow was recognized by the United States Pharmacopoeia in 1880(1). The willows are indigenous to both Europe and the United States. The chief constituent of all willows is salicin. Salicin is a glucoside yielding, on hydrolysis, saligenin and this in turn is oxidized to salicylic acid. Salicin yields about 45 per cent salicylic acid. Besides salicin willow bark contains a large per cent of tannin and small amounts of resin, gum, and a bitter yellow coloring matter.

The author found upon searching the literature that a great deal of work had been done with the chemistry of the different varieties of willow(2), but found little information in regard to the therapeutic use of the bark. Sollmann(3) says it was used as an antipyretic in antiquity. It was introduced against rheumatic fever by Maclagan in 1876 on the basis of the fancied resemblance to malaria. I find in some of the older books on Materia Medica that it was classified as an antiperiodic, antipyretic, and antirheumatic. Salicin was used as a substitute for quinine as early as 1930 in Paris(7).

The following very interesting statement is made in the United States Dispensatory(4): Jowett and Potter made an examination of thirty-three (33) samples of willow and poplar bark and found in but one (*Salix discolor*) the related glucoside salinigrin, which Jowett had previously discovered in an unknown sample of willow bark. This compound on hydrolysis yields glucose and meta-hydroxylbenzaldehyde.

#### PREPARATION

The author, realizing that the unstaible preparation used by the Thomas family would not

be practical, after a number of attempts succeeded in making a preparation with not only keeping qualities, but very pleasing to the taste and of a definite strength as far as the amount of material used.

#### *Formula*

Willow Bark, Dried and cut into small pieces	60 Gm.
-----	

Water	1000 cc.
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*Directions:* Boil for about one-half hour or until the decoction measures about 700 cc. Allow to cool. Strain or filter and add 200 cc. of alcohol and 100 cc. syrup of auranti (orange), and make q. s. to 1000 cc. (about two pints). The alcohol and syrup of orange may be omitted and the filtrate made up to 1000 cc. with water but the preparation will not keep.

*Dose:* One or two tablespoonsful 4 or 5 times daily.

#### **DISCUSSION**

When this investigation was suggested by Mr. Gibbes it was the author's first thought that the effects noted in malaria, when a decoction of willow bark was administered, were due to the salicin it contained. The salicin acting as an antipyretic, lowering the temperature, and thus relieving one of the symptoms and leading those concerned to believe that it had cured the disease.

The author is now wondering if there isn't some new substance formed by the continued boiling of the bark. Salicin, the main constituent, is a glucoside and glucosides are easily broken up by heat. One would suppose, since this is true, that the preparation would react to tests for salicylic acid. This is not true. Every test known to chemist was tried and while the chloride of iron test appeared to give the purple color it was found to be due to tannins present. Since salicylic acid is ortho-hydroxybenzoic acid, a test was made for benzoic acid without results. Tests were also made for salicin, which proved negative. The preparation is without toxicity. The author administered, by stomach tube, 60 cc. amounts to dogs without any effect. This is twice the amount recommended for human beings.

An attempt was then made to employ the method used to show the effect of protoplasmic

poisons on protozoa(5). The preparation given in this article minus the alcohol and syrup of auranti slowed and then stopped the movements of the organisms. Small homopathic vials containing an equal amount of an infusion of hay containing paramoecia and the decoction of willow bark were compared with the effect of a .5 per cent solution of quinine. Quinine is a protoplasmic poison and almost immediately killed the organisms. The solution of willow bark first slowed down the movement of the paramoecia and finally killed them. Unfortunately this only proves that the decoction of willow bark is a protoplasmic poison just as quinine is, but it does not follow that it would destroy the malaria plasmodia, or that the concentration in the blood would be sufficient to destroy the organism. There is no accepted explanation of the mechanism by which quinine cures malaria. A 1-1000 solution of quinine will stop the plasmodia on a slide, but the concentration in the blood of a malarial patient never exceeds 1-100,000 when full therapeutic doses are administered. 2.0 Gms. (30 grains) of quinine a day will give a concentration of 10 mg. (1-6 grain) per liter (33 ozs.) of blood. This concentration will not destroy the organism on a slide, so that we have no test for antimalarials except the clinical use.

In this preliminary report which has to do with the suggested use of willow bark in the treatment of malaria fever a suitable preparation is given and is available to the physicians of this state for trial. Beckman(6) in his text says: "Quinine is the king of antiperiodics, but in persons who suffer quinine allergy, quinine neuritis (particularly optic neuritis), or who are greatly nauseated by the drug, it may be advisable to try some other remedy." Have we a substitute in preparations of willow bark?

The preparation is easily made and inexpensive to prepare. Are we to disregard the findings of a highly respectable family of several generations because of the simplicity of the remedy?

The preparation discussed in this paper will be tested out clinically in local hospitals and at some future date the author hopes to be able to make a report on its value. He hopes that the physicians in malarial districts throughout

the state will feel that the experiment is worthwhile and report cases upon which it has been tried. The preparation can be made almost without expense. The alcohol and syrup of orange may be omitted as they are only added to preserve and make more palatable the finished product. The Department of Pharmacology of the Medical College of the State of South Carolina will be glad to take the matter up with practitioners who would like to try it out. The author would appreciate case reports for his files and will give credit to those concerned.

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#### \*URETHRAL STRICTURE IN THE FEMALE

By Lawrence P. Thackston, M.D.,  
Orangeburg, S. C.

The subject of urethral stricture in the male is one which we are all more or less familiar with, so much so that we usually think of it enough to diagnose a urethral stricture in most of the cases which present themselves. This, however, is not so in the female. There are several outstanding reasons for this oversight, perhaps the greatest is that we feel that the female urethra is so short that nothing can happen to it. The absence of the prostate with all of its many troubles also plays its part. Even our leading authors have been so slightly impressed that most of them in their books mention only a few words about this disease, or leave it out entirely. It is not hard to see

with these conditions present that many women having stricture of the urethra go from doctor to doctor for relief, receiving various treatments which cannot be curative, when a simple examination and relatively simple treatment would relieve them.

Before we go further into the subject, I think it will be well to briefly review the anatomy of the parts involved. The female urethra is a hollow tube which connects the bladder with the outside of the body. It is usually about one and one-half inches long, and is directed downward from the bladder with an anterior curving to the outside. It is posterior to the pubic bone and can easily be palpated against the bone with a finger in the vagina. The female urethra does not have the elaborate glandular structure as is seen in the male. Neither has it the fibrous capsule immediately about the urethral canal. Of course, the prostate is missing. These conditions make the female urethra very easy to dilate, many cases being on record of large vesical calculi being delivered by simply dilating the urethra.

The usual causes of stricture in the female urethra are:

1. Traumatic
2. Chemical
3. Post urethritis
4. Congenital

The chief traumatic cause is of course labor. It is probably here where we may be able to do more to prevent stricture than in any other. In many cases a large number of the patients date their trouble to an especially traumatic and difficult labor. My knowledge of obstetrics is very limited, and I would not for a minute try to advise you how to do your deliveries, but I do want to call your attention to the fact that you have not only the perineum to take care of, but also the anterior structures, especially the urethra. After your next delivery take a look at the urethral meatus of your patient, and I think you will agree that it is a wonder they are not all strictured. Nature is, however, able to take care of most of the cases, and only those having unusually difficult labor or repeated labors have this trouble. I was unable to get correct enough histories from my cases to judge if rapid delivery from the

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wrong use of extracts from the pituitary body had any effect, but I certainly think that they would. Accident cases are of course responsible for all sorts of injuries to the urethra which come under the head of traumatic. Trauma caused from the rough passage of catheters, sounds, cystoscopes, etc., is the cause of many strictures; even rarely, some injuries received in the criminal rape of young children. I have had one case which was caused or exaggerated by intercourse in a lady who became married late in life when she had begun to have a certain amount of senile changes.

Under chemical cause we would have almost entirely those caused by the use of too strong or irritating drugs in the treatment of various urethral infections, among which silver nitrate seems to be the most prominent. I want to condemn here the practice of swabbing out the urethra with various chemical disinfectants with very much the same technique as used in cleaning a gun barrel. This unfortunate procedure is capable of extreme harm. Topical applications should be made by the use of an endoscope only. This of course does not refer to applications to the external meatus.

Stricture following urethral infection is usually post Neisserian and has about the same pathology as that in the male. The history of these infections in the female is, however, much harder to get, as usually the patient has been innocently infected and does not know the true cause of her trouble herself.

Under the congenital head we personally have found but a few cases although it is perfectly possible that these cases may be present and are brought out by labor or other causes. In conversation with the medical director at one of our Southern colleges which has over 1000 girls each year, I was told that there had been only three cases in the past five years.

The strictures which have been seen by me and those which I have found reported are usually found in the upper third of the urethra near the bladder. If you will recall, the urethra at this point passes behind the pubic bone, and pressure from the vagina, as would be seen in labor, would be directly transmitted to the urethra, and the urethra could very easily be traumatized against the bony structures. There

is a normal contraction of the urethra just at the meatus, which should not be confused with stricture. This however can be exaggerated to form a true stricture. Prolapse of the urethra, acute or chronic urethritis should be ruled out directly. Urethral caruncle and papillomata should present little difficulty in the process of diagnosis. The patient who presents herself will usually give a history of constant dysuria and frequency; however, there are some who have only periodic attacks. There is usually a certain amount of tenesmus complained of, and almost always a sense of inability to empty the bladder. I have had two cases of acute retention of urine in the female due to stricture.

The diagnosis can be made by putting patient on an examining table flat with knee supports, and passing olive tipped sounds. These should be passed very gently, and the normal anatomy of the urethra borne in mind. The sound should not be poked violently into the meatus, but gently introduced and passed inward with an arcing of the distal end of the sound to cause the bulb to first pass downward and then up into the bladder. While on this point, I want to say that many women receive injuries which are more or less of a lasting nature by being catheterized by those who are not familiar with the female urethra. After the sound is introduced, it is then gently withdrawn, and a distinct hang or grasp will be felt when the stricture is encountered by the olive. Do not let the grab of the sphincter of the bladder confuse you at this point. It is well to remember that many of these strictures are of large calibre and that a small olive will not get a hang on withdrawal. Extreme gentleness should be the watchword in all procedures of this type. I am reminded of what one of my instructors once said about the passing of a sound, that is, "The sound should be grasped as a violinist does his bow, and not as a bludgeon to crush out ones' enemies."

After the diagnosis has been made, gentle dilatations of the urethra with a regular male sound, starting with the size of the smallest olive to find an obstruction and gradually going up at weekly intervals until an "F-40" or "F-42" sound is passed, in most cases will give

your patient relief. After full dilatation, these dilatations should be given about once a month over a period of a year or so. Some especially fibrous will require more or less permanent treatment. There are also cases that will not tolerate the passage of so large a sound. It should be borne in mind that a great amount of injury can be done and is done by rough sounding, and again I want to say that all sounds must be passed with the greatest ease possible if you expect to help your patient. If there seems to be an unusual obstruction which cannot be overcome with the gentlest type of manipulation, you should give your patient the benefit of complete endoscopy and cystoscopy to make a definite diagnosis.

In conclusion, I want to stress that urethral stricture in the female is far more prevalent than most of us think, that it presents no great difficulty in its diagnosis and treatment, that due to the fact that strictures are often of large calibre they are frequently neglected or missed in an effort to make diagnosis, that they are capable of making life very unpleasant for their unwilling host, and that some of them can be prevented by better obstetrics.

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\*“SOME NEWER NUTRITIONAL FACTS AND THEORIES—THEIR CORRELATION WITH OTO-LARYNGOLOGY”

By J. W. Jersey, M.D., Greenville, S. C.

On the fly-leaf of the immortal Osler's “Practice of Medicine” appears this sentiment of Plato's:

“And I said of medicine, that this is an art which considers the constitution of the patient, and has principles of action and reasons in each case.”

Had Plato used the word “nutrition” instead of “medicine” the truth would have been equally as incisive. Perhaps, after all, the two words may have somewhat of an interchange of meaning.

It is not so long ago that the authorities on human nutrition were stressing the relative im-

portance of fats, proteins and carbohydrates. Then we were overwhelmed with the supreme necessity of the ingestion of the requisite amount of calories. Vitamins were discovered, and we are not through discovering them yet. They became an all-important element of nutrition, and will remain so.

A little later the value of the minerals as catalytic agents in metabolism was brought to the front, though they had previously been known to be essential to nutrition.

In the meantime studies had been made by Sherman and others in reference to the basic ash of various foods, and their reactions in biochemistry—or as Jarvis, of Vermont, has aptly termed it, to be more intelligible to the layman, “body chemistry”—to their end-metabolic activities. Thus we know now, or think we know, that the basic ash of all foods is either acid or alkaline, only a few being neutral, with a direct tendency, as either class of food predominates, to alter the acid-base balance.

We know that the proteins are tissue builders, and that one of their lesser functions is to produce energy and heat in the body; in the metabolism of fats also heat and energy are produced, as well as protective tissues; while the carbohydrates, being the most quickly available in the process of digestion and metabolism—excepting the celluloses which are humanly indigestible, but perform a valuable function in elimination as “roughage”—are the chief first-line reliance for the production of heat and energy in man. Hence the good old southern custom of a plate of hot hominy, a waffle or biscuit and syrup to begin with breakfast to prepare for the exigencies of the day's work. When ingested in excess they are converted into fat in the body to be drawn on for future use.

In the matter of “calories” it is an accepted fact that a certain number of them, say 2500 to 3000, are daily necessary for the sustained nutrition of the average man. Accepting this as a minimum requisite, the maximum of toleration is so much greater, and the normal intake of food being virtually certain to supply the minimum, the question becomes almost academic in this discussion.

The vitamins and the minerals in late years

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have been shown—and especially valuable contributions to the subject have been made by our own South Carolina Food Research Commission, under the able direction of William Weston—I say the vitamins and minerals have been shown to be essential not only to the sustenance of animal life, but to its growth and reproduction.

Thirty million souls in the "goiter belt" of the United States are seriously dependent, tho they do not all yet know it, on the soil of South Carolina to supply them with food products with the iodine content that will insure them against the onset of the dread disease. Other essential minerals and vitamins in profusion, one might almost say in Nature's extravagance, have blessed the soil of our state, more than any other area yet known, as is being daily shown by Weston and Remington of the South Carolina Food Research Commission. Can you conceive of what this means for the ultimate value of our farm lands and the prosperity of our people? Truly, these agencies will take cotton off of the poor man's back and put him astride of a veritable vegetable Bucephalus.

The "basic ash" of foods is believed by many today—myself among them—to be of supreme importance in nutrition and a maintenance of the balance of body chemistry. Normally the fluids of the human body are faintly alkaline, the tissues faintly acid. This balance must be maintained or disease supervenes, either in the form of cellular disintegration and malfunction, and therefore organic insufficiency, or else as a weakening of the "vis resistantiae naturae," permitting the invasion of the tissues by infection. This theory, with the as yet embryonic proof of its practical truth, is so rational that the conclusion seems warranted, astounding as it may appear, that in due course of time, the scientific balancing of body chemistry plus the essential vitamins and minerals, preserving the life and activity of human cellular structure, will inevitably result in the indefinite prolongation of human life, only barring violent or accidental death.

We shall see in a few moments, then, that we may virtually disregard any especial consideration of fats, proteins, and carbohydrates,

or of the essential calories, because with the proper food selection in relation to basic ash—combined, of course, with the necessary vitamin and mineral content—and even these will for the most part be automatically taken care of—we shall certainly be using the essential classes of food, and in sufficient amount to supply the caloric requirements.

It is my belief, then, that with the exception of diseases due to physical agents—sunstroke and gas poisoning, for example: the intoxications (alcohol, opium, etc.); and the specific infectious diseases (and even some of these can be controlled and even prevented) the diseases which flesh is heir to can be largely successfully prevented or combatted by a properly intelligent system of food selection.

"Tell me what he eats and I'll tell you what he is" is an old saw of our observant forefathers, which, with many another old saying, has not been taken at its true value by this generation.

So, I believe, all of the so-called deficiency diseases; all of the diseases of metabolism; all of the diseases of the hematopoietic system; all of the diseases of the circulatory system, and of the endocrine glands; all of the diseases of the nervous and locomotor systems; and all of those diseases of the digestive and respiratory systems and kidneys not due to specific infections (and even these subject to possible prevention or control) can be prevented and oftentimes even cured by a proper observance of the requirements of nutrition; and this includes neoplastic developments, malignant and benign.

It will interest you to hear the casual summing up by Eugene Lewis, of Los Angeles, in a personal communication, himself a brilliant investigator in the field of "body chemistry," of the physiologic norm. Modestly enough he starts: "I have a crude working philosophy which has helped me sometimes when I have been seeking elusive game. Looking on this human body as a community one sees different cell groups as working gangs, each with its own special job, the tending to which contributes to the well-being of the community; the 'gas works gang,' the 'water works gang,' etc., centralized control over each individual piece of

work done by each gang (their 'reactions') and the composite of all sets of reactions, the community response; series of responses, adaptation to environment. One manifests asthma, another doesn't, etc. Summation of all-gang reactions with what they happen to be reacting to (in fair weather) we term "physiologic phenomena"—temperature 98.6, pulse 72, B.M.R. between minus 6 or 8 and plus 6 or 8, B. P. circa 120/80, nutrition cycle circa three meals per day, one to two good bowel movements per day; gestation period circa nine months, etc., etc. So-called 'norms' are details whereby the great physiologic pattern may be identified—the clinical means whereby we recognize normality or departures therefrom.

"Subdivide man for a minute into component cells and have a look at one cell. It differs from any other matter combination of *identical composition* (itself at the moment of death, for example) in that it has the property of selecting particles of matter from its immediate environment; incorporating them into itself according to its own unique structural pattern, incidentally appropriating their charges of energy, discharging this energy in response to adequate stimulus, throwing off as 'waste' matter of no further use to itself. In this one sees the mountain coming to Mahomet—the world brought piecemeal to each individual cell via intercellular space, whose content is water, cells, polar and non-polar particles.

"Some of these particles are potential fuel (or 'food'), some catalysts such as hormones, vitamins, etc., some bio-physical necessities for hydrogen-ion stabilizations, imbibition, osmotic pressure, surface tension balancers, etc., some offal bound for disposal; some extraneous cells, pollen, bacteria; some intrinsic cells, phagocytes, histiocytes, et al. Add agglutinins, lysins, opsonins, ad nauseam!"

"Anyhow, the world contacts each cell. And the outcome of all contacts—how are you today?"

Thus Lewis gives us his summation of our daily contact with bio (or body) chemistry.

But how are we to know when this delicate engine is "hitting on all twelve"? Assuming that it will work to best advantage only when

all parts are happily adjusted; and assuming that there is a delicate bio-chemical balance (which there is) which demands recognition; how are we to determine, when a syndrome of disease appears, what may be the underlying cause?

Jarvis, of Vermont, after sixteen years of clinical study and observation, reached the conclusion that the mucosa of the anterior nasal septum gave the clue to acid-base unbalance in the individual patient. According to his observation an unusual redness of the anterior septal mucosa means an acid-ash preponderance; on the other hand, an unusual pallor of this mucosa means a basic or alkaline ash preponderance.

It has been my observation that the gingivobuccal fold of the lower mandible will give us the same information. Jarvis deserves all the credit for sensing and proving the fact that the mucosa covering the anterior or cartilaginous portion of the nasal septum can be accepted as an indicator of the body chemistry reaction—acid or alkaline.

The importance of this observation lies partly in the fact that many of the most morbid entities (micro-organisms) attacking mankind cannot live in an alkaline medium. In this connection we must give due credit to the Landers, of our state, who some years ago advised us of the importance of attacking typhoid and influenza (plus pneumonia) infections with alkaline reactions. But Jarvis goes even farther. He shows that when an individual crosses the line of starch tolerance there is a mucoid or muco-purulent discharge in the nose and nasopharynx, and in the nares there are to be seen little mucous or muco-purulent "bridges" from the septum to the turbinates—thin lines of discharge stretching across the lumen of the nares; and that when the line of sugar tolerance is crossed there is a clear mucous or watery discharge in evidence from the nares. And these phenomena have been demonstrated too often to admit of serious doubt as to their occurrence. Also, there is undoubtedly such a thing, and not so very infrequent, of recurrent purulent otitis media, due to the line of starch tolerance having been crossed, especially in children; and this recurrence can be controll-

ed by the withdrawal of carbohydrates from the dietary.

Whether or not Jarvis' observations on the mucosa of the anterior nasal septum prove to be a true clinical index to the acid-base balance, the fact of the importance of these reactions in body chemistry is not altered. In the words of Osler "study the anamnesis," the intimate details of the history of the case—and in our present discussion the habitual dietary—and the facts elicited will guide you in the regulation of the food, or "therapy" if you will, in the individual case.

Assuming that Lewis's general description of the physiologic norm is correct—and I fancy none will deny it—then it is necessary to keep all of the units (all of the "gangs") in constant and consistent co-operation.

The physiologic chemist smiles indulgently when one mentions "body chemistry." He says that "body chemistry" is a more or less fixed factor in life and it is difficult to alter it. Nevertheless, Lennox, of Boston, has definitely shown by animal experiment, that a factitious acidosis will *increase* the lumen of the peripheral circulation by fifty per cent., while an alkalosis, produced by therapy, will *decrease* the peripheral vascular caliber in equal degree (that is, fifty per cent.). With these facts, one can easily see and appreciate the explanation of Jarvis' clinical observations on the mucosa of the nasal septum.

You may ask "but how are we to control the reactions of body chemistry"? The answer is that there are two ways, each an adjuvant to the other. First by chemical therapy; the use of alkalis, such as bicarbonate of soda, for example, on the one hand; or, dilute nitrohydrochloric acid on the other hand. But this is only for immediate effect and cannot, of course, be continued indefinitely. Proper food selection is the answer.

Beware, however, of placing your patient on a "diet." A "diet" is a dangerous thing and often enough makes hypochondriacs. Tell him you are only suggesting a better "food selection."

Second: In a general way it may be said that on the alkaline side of food ash we may class practically all of the fresh vegetables, plus

milk, which latter is the only animal food product which has an alkaline basic ash. In addition we have on the alkaline side practically all of the fruits, and especially the citrus fruits—the only exceptions being prunes, plums and cranberries (remember this by the socialite letters p.p.c.—pour prendre conge—about to take leave). Bear in mind that the frequently quoted "acid stomach" has nothing to do with the general tissue reactions.

Often a patient will say "I can't eat citrus fruit or tomatoes or peaches or strawberries, etc., they are acid and upset me." On the contrary they are alkaline in their terminal metabolism, and are often the very thing the patient needs.

On the other hand the starches taken as a whole, and animal foods, fish, flesh and fowl, are the acid ash producing foods. Potatoes, squash and perhaps one or two others are the only starchy vegetables giving an alkaline ash. And remember also that among the fruits, bananas, though highly starchy, have an alkaline basic ash.

With these simple facts in mind, do you not see that by a proper regulation of food, the acid or the alkaline basic ash predominating, as the case may require, it is not a very difficult matter to regulate the "body chemistry" of your patient?

When intensive changes seem imperative we have recourse to the chemical alkalis and acids, such as bicarbonate of soda on the one hand, or the dilute inorganic acids of the pharmacopoeia on the other. As a rule, these latter are to be used only for a rapid reversal of body reactions, the constant to be taken care of by proper food selection.

If, then, it be accepted that in order to maintain health, body chemistry must be kept balanced—and I subscribe to this theory—it is of the utmost importance that some means be readily at hand to determine in which direction this balance (or off-balance) is swaying in any given instance. Laboratory methods (while I revere them) are time-consuming and unfortunately not always reliable; instruments of precision such as the ophthalmoscope, the microscope, the cystoscope, the x-ray, the bronchoscope, the electro-cardiograph, etc., do not help

us here. What they reveal are but late results of what might have been previously discovered and prevented.

Many a supposed mastoiditis; many a supposed and even actual sinusitis; many a laryngitis and other respiratory distresses; many a so-called nasal or naso-pharyngeal "catarrh" with "phlegm in the throat" (the "great American disease"—and I am sure a nutritional one) have I seen cleared up by an intelligent control of the requirements of body chemistry.

Stucky, of Kentucky, was one of the first, if not the first, to realize the importance of the physiologic balance in the treatment of diseases of the upper respiratory tract. Twenty-five years ago he sensed it, and preached it year in and year out until his tragic death last year. This is only the oto-laryngological side of the matter. These theories are probably equally as true in general medicine and every specialty.

Sansum, of California, evidently profiting by the studies of Sherman and Smith, applied the principles of basic and acid ash of foods and can today show the remarkable results of his application of them. I can only advise you all to read his little book on "The Normal Diet." You will learn there something of the highest importance to yourselves and your patients. After reading Sansum, many of you will doubtless be surprised (and incredulous until you try it out) at the results he obtains in patients with hypertension, for example, by the amazingly simple process of balancing the body chemistry with appropriate food selection.

There is not sufficient time here to outline case histories. My hope now is merely to stimulate interest in this great problem. I can only repeat in general that case after case of acute and chronic nasal affection, paranasal sinus disease, supposed mastoiditis and other upper respiratory pathology has been brought under satisfactory control, without operation, by means of the application of the principles just enunciated.

I do not mean to decry surgery. In otolaryngology surgery, especially for ventilation and drainage, and the removal of diseased and deformed tissues, is as necessary as in other fields; but it is often resorted to when it need not be. This is the answer.

You may ask: "If, by an inspection of the nasal mucosa, you can determine whether a patient is actually or potentially acidotic or alkalotic, what steps can be taken to remedy the situation?" The answer is that the proper food selection will turn the trick. Additional therapeutic means, such as the use of bicarbonate of soda on the one hand, or dilute nitro-hydrochloric acid on the other, may be used as has previously been intimated. The tables of food values and their ashes are easily available. They are of the utmost importance and should be studied by every practitioner in every specialty of medicine. The little book by Alice Bradley, "Tables of Food Values," is of inestimable value to every man who wants to practice modern medicine, regardless of the specialty to which he leans. In this intensely practical little volume is tabulated every conceivable food of man, showing its classification, its essential content, its basic ash, its caloric value, its actual and relative vitamin and mineral content. Get it; read it; refer to it; profit by it.

Above all, remember this: The balance of body chemistry is the real answer to health and longevity; and the clinical index to that balance is at present probably to be found in the nasal septal mucosa, and perhaps in the gingivobuccal mucosa, but if not there, then certainly in the anamnesis.

Finally, I warn you: Each individual, so far as physiologic or body chemistry is concerned is a law unto himself. No cut-and-dried, ready-made suit of therapy can be draped upon his or her shoulders. Each case must be studied and the therapeutic cloth cut to fit.

And to paraphrase and remind you again of Plato's observation:

"I said of (nutrition), that this is an art which considers the constitution of the patient, and has principles of action and reasons in each case."

## DISCUSSION

Dr. William Weston, Columbia:

Mr. President, when Dr. Jersey was good enough to send his paper to me, and I carefully read it, the first impression that I received was that in all probability the majority of the men here would be skeptical of his interpretation of

biological and physiological chemistry as he has interpreted it. The subject that he discusses covers a tremendous field. It is probable that in the field of nutrition will be discovered the true etiological factors concerned in the diseases that we now recognize that are of obscure origin.

I think if we review the work of the Mellanbys on carotene and other substances containing vitamin A we can not but be impressed with the possibilities in preventive medicine. You are all no doubt familiar with the terrible epidemic of pneumonia in the diamond mines in Kimberley, South Africa. The epidemic was characterized by such an enormous mortality rate that it appeared doubtful whether the mines could continue to operate. The British Government sent the Mellanbys to try out carotene, the authorities knowing, as they did, their spectacular success in the prevention of black tongue and certain respiratory diseases with the use of this vegetable derivative. Carotene was administered to those who had already contracted pneumonia, as well as to those who had been exposed, with the result that the mortality rate was considerably reduced and altogether prevented in the exposed. Dr. Mellanby believes that carotene may be a very effectual agent in the cure of pellagra.

We do not altogether understand how the chemical elements are utilized by the body, but new light is being constantly thrown upon the subject. We thought a year or two ago that vitamin D was the determining factor in the causation or prevention of rickets. We now know that there are a number of factors concerned. We do not altogether understand what are the factors concerned in the utilization of either calcium or phosphorus, or what brings about a balance in these elements. We are just beginning to learn that iron, when reduced below a certain point in the diet, interferes with the utilization of both calcium and phosphorus. We are also assured that there are several chemical elements concerned in the utilization of iron, such as copper, germanium, cobalt, zinc, manganese, and iodine.

We have been trying here in South Carolina to get a milk with the utmost mineral value and vitamin value as well. We have succeeded in greatly improving milk in these respects. We believe that this milk is superior to the ordinary milk. This opinion has not been proved as yet, but I am sure will be by a group of the foremost medical authorities in this country and Canada.

It was a great pleasure, my friends, to have heard Dr. Jervey's paper, and I think the group to which he belongs and is such an outstanding member deserves unstinted praise in the great work they are doing in determining the relationship of diet to disease.

Dr. Hugh Smith, Greenville:

When Dr. Jervey very kindly offered me an opportunity to discuss this paper, I embraced the opportunity with much enthusiasm, but when I learned that I was to follow Dr. Billy Weston my enthusiasm for the discussion dropped a little bit, but my enthusiasm for the paper and for Dr. Weston's discussion was enhanced no little. I feel somewhat like a tallow candle lighted in the middle of the day, following these two speakers.

The science of nutrition is, of course, of vital importance to all of us, no matter what branch of medicine we practice. Personally, it is quite easy for me to get lost in the ramifications of these subjects. We talked for years about the vitamins, then jumped to the minerals, then talked about the acid ash and the alkaline ash; and I have had quite a difficult time getting a clear grasp of the matter. I like to think of it more as a matter of an ordinary, satisfactory diet, a diet which we can all learn in our childhood, that we should learn in our schools, and that all future parents will just simply automatically give to their children. We, of course, ought to follow always the food balance that will take care of all possible needs.

Some ten years ago I read an article by Robert McCarrison which stimulated my personal interest in nutrition. It remains to me the most fascinating single article on nutrition that I have ever read. I should like to suggest to you that those of you who can, go back to the first issue of the American Medical Association Journal in 1922 and read it. This article of McCarrison's was based on nine years spent in the Himalayas, miles away from civilization. He made the statement that out there in those nine years he never saw a single case of dyspepsia or of ulcer or appendicitis or mucous colitis or gastro-intestinal cancer. He said that during those nine years his operative list had averaged some four hundred major operations annually, but his abdominal operations were limited to strangulated hernias and to obstructions from the ubiquitous Ascaris. He gave as the reasons: First, that the infants are reared at the breast; second, that the people live on the unsophisticated foods of nature; third, they are eminently a race of teetotalers; fourth, their manner of life requires vigorous exercise of their bodies. He affirms Hindmede, who says that the two chief causes of disease and death are food and drink.

Dr. Jervey, closing the discussion:

Just a word, Mr. Chairman. Let us bear in mind the old epigram of Benjamin Franklin, "Men dig their graves with their teeth." I want to call to your attention this very significant remark recently made by an eminent professor of Vienna, who, on the celebration of his seventieth

birthday, said: "In my clinical lifetime surgical technic has been brought to its absolute perfection. Nothing more can be expected of surgery. The fields for the future lie in bio-chemistry and nutrition." Take that to your hearts, ladies and gentlemen; meditate on it; think about it, and act accordingly.

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\*A DISEASE OF THE ROCKY MOUNTAIN SPOTTED FEVER TYPE IDENTIFIED MARION COUNTY (S. C.)—CASE REPORTS

By B. M. Montgomery, M.D., Marion, S. C.

It is not intended in this article to deal with spotted fever as known in the west United States, particularly Idaho and Montana, since 1873; rather, reference shall be made to a disease, as the title of this paper suggests, clinically indistinguishable from Rocky Mountain spotted fever, and of late identified in several eastern and southern states (Delaware, Maryland, Pennsylvania, Virginia, North Carolina) and the District of Columbia.

Despite striking clinical similarity, certain variations have been noted in animals inoculated with the virus of the disease recently identified in the eastern states, when compared with animals inoculated with a strain of western Rocky Mountain spotted fever—such differences serving to indicate a somewhat less virulent virus in the eastern than the western type of the disease. So, accepting these differences, it has been deemed fit to refer to the disease noted in the east as the "eastern type" of Rocky Mountain spotted fever in contrast to the "western type" of old.

In June of the past year, it was the privilege of the writer to observe and study two cases presenting clinical manifestations adequately justifying the diagnosis, "Rocky Mountain Spotted Fever (Eastern Type)"—the first of official recognition in South Carolina.

Reporting a partial analysis of 100 selected cases, A. Rumreich, Passed Assistant Surgeon U.S.P.H.S., et al, describe graphically the disease, as recognized in the east United States; and the clinical and epidemiological data henceforth supplied are taken, largely, from such

records, and contained in Public Health Reports, February 27, 1931.

#### CLINICAL FEATURES

**Onset.**—The onset, in the majority of cases, is sufficiently abrupt that a definite time can be stated designating the attack—generally in the late afternoon or early evening. Certain cases are found preceded by a period of lassitude, malaise, or restlessness—lasting from one to seven days. Initial symptoms, in the main, are a chill or chilliness, headache, fever, anorexia, and prostration. Generalized aching is prominent, and a number complain of pain in the neck—occasionally also in the abdomen.

**Fever.**—Temperature may reach 102 to 105 F. in from 3 to 10 days, with morning remissions of 1 to 3 degrees. A maximum temperature of 107.2 F. has been recorded—with defervescence, after average duration of 21 days, usually by moderately rapid lysis.

**Rash.**—The rash appears between the 3rd and 7th days, most frequently on the 5th or 6th, quite often on the 3rd or 4th. The site of first appearance is invariably the wrists and ankles, usually next noted on the back, then rapidly to become generalized. The palms and soles are involved quite frequently, the face occasionally, the scalp rarely—extension acquiring completion in 2 to 3 days. The lesions are at first faint roseolous macules, 2 to 6 millimeters in diameter—often fading in the mornings to reappear with the afternoon rise of fever. Growing more distinct from day to day, the rash by the middle of the second week may be found definitely petechial in all but the mildest cases. Subsequently to this stage, the character of the lesions is purpuric, and as a rule most abundant on the wrists and ankles, the legs, upper part of the back, shoulders, lateral surfaces of the arms, the chest, abdomen, palms and soles, and the face, in the order mentioned. The petechiae, when numerous, often become confluent—particularly about the ankles. In cases with a well developed purpuric rash, evidence of the lesions frequently persists for several weeks in the form of dusky purplish or yellowish brown spots—and occasionally there is noted a branny desquamation of the legs, commencing late in the disease or early in convalescence.

\*Read before Seventh District Medical Association, Home Lake, Manning, S. C., September 8, 1932.

**Physical Findings.**—At the height of the illness the face is flushed, sometimes dusky, the tongue dry and coated and at times red at the tip and edges. An enlarged spleen, usually tender, was found in 36 per cent of the Rumreich series; rigidity of the neck, with Kernig's sign, in 20 per cent. In the severer cases, the pulse rate may mount quite high, ranging from 130 to 160.

**General Symptoms.**—The commonest symptoms, in order of frequency, are prostration, headache, constipation, nausea and vomiting, pain in the back of the neck and in the abdomen.

**Nervous and Mental.**—Lethargy, oftentimes associated or alternated with insomnia, restlessness, or irritability, is invariably present. Actual stupor, coma, and meningismus are not infrequent—as are also hyperesthesia, tremors, and delirium.

**Laboratory Findings.**—Leucocytosis is the rule. The urine, at some stage of the disease, is usually found to contain albumin—rarely, granular or hyaline casts. The blood serum agglutinated, early or late, *B. proteus* X19 in dilution of 1:80, or more, in nearly all cases of the series of Rumreich, et al.

**Complications and Sequelae.**—Convalescence is usually protracted. Deafness, visual disturbances, slurring speech, and mental confusion are occasionally noted to persist for weeks.

**Fatality.**—Of 93 cases of Rocky Mountain spotted fever (eastern type) occurring in 5 states and in the District of Columbia, in the spring and summer of 1930, 21 died—a case fatality rate of 22.6 per cent.

#### EPIDEMIOLOGICAL CHARACTERISTICS

**Geographic Distribution.**—While the geographic boundaries of spotted fever are not known, rural communities of Delaware, Maryland, Pennsylvania, Virginia, North Carolina, and the District of Columbia, have supplied cases of the "eastern type" thus far identified.

**Seasonal Distribution.**—The earliest case observed by Rumreich, et al, had its onset April 7th. Otherwise, cases occurred April, May, June, July, August, and September—with a single attack in December. Quite naturally, occurrence should coincide with the tick season, or the spring and summer months.

**Race.**—Three attacks have been known to

affect negroes; otherwise the victims were of the white race.

**Sex.**—A preponderance of male subjects has been noted.

**Age.**—The disease has attacked a larger proportion of children, though no age is exempt.

**Incidence.**—Cases have been mostly grouped in areas of 5 to 20 miles diameter; and in all of these areas the disease had occurred in previous years.

**Source of Infection.**—A definite history of tick bite within 3 weeks prior to onset was elicited in 48 per cent of the Rumreich series; a percentage of 6 crushed engorged ticks removed from dogs—the remaining cases having occurred under conditions favorable to tick bite. In 15 per cent of the uninfected members of the households in which cases had occurred, tick bites had been noted in the 1930 season up to the time of investigation of each case. A systematic collection of ticks in 3 of the focal areas showed the predominant species to be *Dermacentor variabilis*—or American dog tick.

**Incubation.**—Reckoning from tick bite or the crushing of ticks, probable incubation ascertained in 22 cases, follows: 8 of 3 days; 2 of 4 days; 2 of 5 days; 1 of 6 days; 3 of 7 days; 1 of 8 days; 2 of 10 days; 1 of 12 days; and 2 of 14 days—giving a majority average, 3 to 7 days.

**Multiple Cases in Household.**—There are recorded 3 instances of occurrence of multiple cases in a household—1 of which instances having afforded 3 cases, with intervals of 12 days, and of 7 weeks; while in each of the other two households, there were 2 cases which came down within a week of each other.

#### DIFFERENTIAL DIAGNOSIS

The prodromal and early symptoms of Rocky Mountain spotted fever (eastern type) are not different, in particular, from those observed in other acute, eruptive, febrile diseases; and, alike, vary in degree of severity. Endemic typhus fever (Brill's disease), which it most resembles, may be distinguished by the shorter duration; certain characteristics and distribution of the rash (affecting wrists, ankles, back, and face; petechial and purpuric in character, and persisting after defervescence in the east-

ern type of spotted fever, while not in typhus); a normal or diminished white cell count contrasted with leucocytosis in spotted fever; typhus is urban while spotted fever is rural—the former being transmitted by fleas from the rat; the latter by ticks.

#### PROPHYLAXIS

Prevention is comprised in the avoidance of ticks; the destruction of the tick by clearing and burning vegetation on lands in infested zones; further by dipping domestic animals; and finally by destruction of ground squirrels, chipmunks, and other rodents which serve hosts to the tick. A protective vaccine of proved efficacy was perfected in 1924 by Dr. R. R. Spencer, U. S. P. H. S., and has since been employed with quite satisfactory results.

#### TREATMENT

Treatment is solely symptomatic, and conducted in the manner of other acute, febrile, infectious diseases.

#### CASE REPORTS

Case 1—ABD.—White female, age 6 years; school girl. Illness of sudden onset developed several days prior to June 2, 1931. Her temperature was 103 F.; and she complained of headache and pain in her legs. A "breaking out," thought to be measles, was first noticed by parents on morning of June 2, and described by them to have appeared and initially affected surfaces of legs near or about the knees. At this stage the family physician was called, and the condition pronounced "roseola." After 3 days, and during which time the illness had increased in severity and the rash spread, the doctor was recalled, and thereupon diagnosed the disease typhoid. June 11th, following, was occasion of my first observation of the case, had in consultation with attending physician. Typhoid fever, with a rash unprecedented in the experience of either attending physician or that of my own, was accepted in diagnosis.

Upon a return visit the 12th of June a second child of the household who had fallen victim to a malady thought identical with that of "Case 1" and had taken to bed 3 days previously, now presented the unusual eruption as was manifest in the patient primarily ill and

whence it was dubiously conceded to be a phenomenal rose-rash of typhoid. This latter incident having served to cast doubt, available wits were put about to solve an ominous problem.

Patient continued progressively and desperately ill. A rash, at first of the roseolous character, over a period of 10 days duration had become generalized and definitely petechial. Repeated Widals were negative; and a differential blood count showed 15000 leucocytes. Stupor, in varying degrees, supervened. The rash in areas, particularly about the ankles, now became purpuric. A positive Weil-Felix reaction was reported from the National Institute of Health in Washington, under date June 19th (or latter part of second week of illness)—with serum agglutination of *B. proteus* X19 in dilution of 1:2560.

Temperature, with profound prostration, and marked severity of all symptoms, continued for 27 days from appearance of rash—ending by lysis over a period of 1 week to 10 days. Evidence of the rash persisted during defervescence in the form of dusky purplish spots—to finally disappear in branny desquamation most noticeable over extremities. Convalescence was protracted; eventual recovery complete.

For past 4 years child lived on farm with family; at present location since February 1931. Home located in clearing bordering on close-by wooded area. At edge of woods is a sawdust pile where children had habitually indulged in play. Father gives history of removal of an engorged wood tick from forearm of patient, approximately 3 weeks prior to onset of illness.

Case 2—OD.—White male, age 12 years; school boy, at time of onset of illness engaged in farm labor. Plowed in a. m.; and hauled fertilizer during afternoon until 3 o'clock—thereupon returning to house complaining of severe headache, and declaring himself unable to attend team to stalls, June 9, 1931. Temperature registered 104 F. On 12th, a faint roseolous macular rash appeared on distal extremities, rapidly spreading to body generally. The clinical course was only different from "Case 1" in somewhat less severity of all symptoms, especially stupor.

Weil-Felix reaction negative June 19th, or

10th day. A second serum was reported positive Weil-Felix in dilution of 1:1280, and partial in dilution of 1:2560, June 25th—or 16th day.

Habitat and habits as of "Case 1"—case 2 constituting a multiple household contagion.

History of engorged tick removed from left groin ("head severed with pocket knife and the burning end of cigarette applied") on morning of day of onset of illness.

Recovery complete after prolonged convalescence.

**Note.**—Under date of July 8, 1931, report from the Hygienic Laboratory of the S. C. State Board of Health affirms: "Following injection of 2 cc bloody serum (specimen obtained from case 2) subcutaneously into guinea pig June 27, fever and scrotal edema appeared June 28th to increase for several days; thence decreasing with apparent recovery July 8th.

Confirmatory of diagnosis Rocky Mountain spotted fever."

#### COMMENT

The discovery that a disease of this type is present in the eastern part of the United States is important to the general public, and alike

to the medical profession and health authorities. Rocky Mountain spotted fever is spread by the bite of ticks; and the present evidence indicates that the type of disease lately reported for the eastern states is also spread by ticks. The disease is rather severe, and death has resulted in a number of cases. As occurring in the Rocky Mountain section, spotted fever is often extremely severe, with a mortality ranging from 60 to 90 per cent. Happily the disease never attacks large numbers.

With identification of spotted fever as constituted in case reports here submitted, South Carolina automatically becomes of the list of states (and District of Columbia) thus far known to have furnished cases of the "eastern type" of the disease. And though after lapse of a year no recurrence has been noted, the history of spotted fever warrants confident expectation of further incidence in our State.

#### ACKNOWLEDGMENT

The writer desires to acknowledge indebtedness to Dr. H. B. Webb, of Nichols, S. C., in collaboration with whom the cases reported were observed and studied, and in whose private practice they occurred.

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#### MEETING OF THE COLLETON COUNTY MEDICAL SOCIETY AT THE CHARLES ESDORN HOSPITAL, JAN. 16, 1933

The meeting was called to order by the President, Dr. L. M. Stokes with the following members and visitors present: Drs. Mitchell, McCrady and Lynch of Charleston; Drs. Ellis and Larisay of Varnville; Drs. Hudson, Bennett, Whitley, Bowen, Von Lehe, Ackerman, Sr., Ackerman, Jr., Stokes and Brown. The minutes of the last meeting were read and approved.

Dr. Kenneth Lynch, of Charleston, gave the address of the evening which proved quite interesting and instructive. He talked on the value of Routine Pathological examination of all tissue removed at operation to the patient, hospital and surgeon. He discussed the various tissues from a hernial sac to cancer of the breast and showed how we could be helped by the routine examination of all, not only in diagnosis but in treatment and prognosis as well. Nodules in the breast and suspicious cervices were especially stressed. He did not favor frozen sections stating that suspicious tissues should have a careful and unhurried study.

Dr. Mitchell was then called on to discuss the

practice of medicine before the advent of laboratories. This he did in a very graceful manner.

The Society then adjourned to the A and B cafe where a bountiful chicken supper was served.

Carroll Brown, Secretary.

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#### SECOND DISTRICT MEDICAL SOCIETY SEMI-ANNUAL MEETING, HELD AT AIKEN, S. C. TUESDAY, JANUARY 24, 1933—PROGRAM

1. Address of the President—Dr. Austin T. Moore, Columbia, S. C.
2. Maternity and Infancy in South Carolina—Dr. Ben Wyman, Columbia, S. C.
3. Strabismus—A Plea. With Case Report—Dr. I. J. Mikell, Columbia, S. C.
4. Medical Work in Relation to Veterans Administration—Dr. O. E. Herndon, Columbia, S. C.
5. Importance of Urological Investigation. Discussion—Dr. J. E. Boone, Columbia, S. C. Dr. W. R. Barron, Columbia, S. C.
6. Amoebic Abscess of the Liver. With Case Report—Dr. G. H. Buneh, Columbia, S. C.

Discussion with X-Ray Illustrations—Dr. T. A. Pitts, Columbia, S. C.

Claude K. Lindler, M.D.,  
Secretary & Treasurer.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

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No. 2

Poverty and tuberculosis go hand in hand; so runs the doctrine preached for a score of years. Some even regard the tuberculosis death rate as a rough barometer reflecting the fluctuations in the economic state of the people. For more than three years hard times have blighted the country; few have escaped its evil effects. Yet the tuberculosis mortality rate continues to decline. How can this paradox be explained? No authoritative answer is available and none would be so rash as to predict a continuation of the downward trend. But a consideration of some of the influences that undoubtedly play a part in this phenomenon may suggest what steps in the future must be taken to sustain the present favorable trend.

### EFFECT OF DEPRESSION ON TUBERCULOSIS

The tuberculosis death rate for 1930 in the United States reached the low point of 71.5 per hundred thousand population. Unofficial but reliable estimates for 1931 show a rate of approximately 67 per hundred thousand. The Metropolitan Life Insurance Company calculated that at the end of the third quarter of 1932, the tuberculosis death rate had declined 6.9 per cent as compared with the like period of 1931.

Deaths from tuberculosis come mostly from that group who have had the disease for some time. Among the tuberculous population at any given time there are always some whose fate hangs precariously in the balance. A slight downward push on the scale such as hunger or worry, is likely to bring the struggle to a premature end. Apparently there are not enough such "critical" cases of tuberculosis among the "new-poor" to affect appreciably the mortality rate.

We are not certain however that hard times are not increasing the morbidity of the disease. Assuming the average expectancy of the con-

sumptive to be five years, the present effects of deprivation, even though temporary, may shorten that expectancy. Furthermore, our present understanding of the manner in which tuberculosis begins and develops, justifies us in assuming that environmental influences often determine whether or not a child with early lesions will later develop the destructive adult type. And many children now heavily infected but not yet labeled "tuberculous" are suffering deprivation. Thus the toll of the enemy may be so "absorbed" in the years to come as to show no definite "hump" in the mortality curve.

Aside from these probabilities why has the mortality rate not yet reflected the effect of poverty? While poverty and tuberculosis are closely related, there is nothing about poverty *of itself* that favors the disease. The sole, direct cause of tuberculosis is the tubercle bacillus. Without infection by that specific germ, even Job's turkey could not possibly develop phthisis. But the *by-products* of poverty are the active allies of the enemy.

One such by-product is faulty nutrition. We have not thus far permitted this by-product to overwhelm us. Luxuries, comforts, and even self-respect may have to be sacrificed by many people, but old-fashioned starvation for the sheer want of bread is a disgrace we are determined not to suffer. Nor is the nutritional quality of food being sacrificed to any great extent. During the war, the hunger of European peoples was appeased by filling their bellies with food substitutes of poor nutritional value. Not so in the present crisis. True, the consumption of milk has decreased somewhat, but on the other hand, the cheap price of butter has enlarged sales of that article at the expense of butter substitutes. Meats, vegetables, and fruits have dropped to a price level that discourages the competition of foods of lesser nutritional value. Allowing for the concessions many families are making, we still may

safely assume that no widespread harm has as yet been wrought because of poor nutrition.

Another by-product of poverty is the crowding together of families, which in turn favors the ready transfer of the tubercle bacillus from the sick to the well. Domiciliary crowding has not yet been severe. The inhuman huddling of several families in quarters designed for one, as was so common during the war, has been mitigated by lowered rentals. Incidentally, the experience in German cities in the post-war period indicates that food shortage rather than crowding is the significant factor in causing an increase of the rate. During the blockade when food supplies were cut off, the tuberculosis death rate rose to unprecedented heights. When the blockade was lifted this rate declined precipitately to its former level, though the housing shortage continued as before.

A third by-product of poverty is shattered family morale. "What's the use!" is the attitude of the discouraged family. Slovenly habits creep in. Why wash the dishes carefully? Why not spit on the floor? Why keep the appointment with the doctor? Cheerlessness and numbness subtract their toll from one's capital of resistance. Deplorable situations are evident, but in the aggregate we have kept our courage to the sticking point, and the pessimism that now presides in many households has not yet become chronic.

#### *Momentum of the Movement*

An important factor responsible for the continued decline of tuberculosis deaths is the cumulative effect of the tuberculosis movement. For a score of years, educational propaganda has been rolling up its force; its momentum has been slackened only slightly by the present pot holes in the highway of progress. Knowledge acquired in the past has not lost its power; our respect for tuberculosis has not lessened; habits and practices acquired in the good days continue to function in the bad.

But perhaps the most pertinent answer to the question as to why the death rate has not taken an upward turn is to be found in the tuberculosis fighting machinery that is now functioning. It is, of course, inadequate, but in no previous depression have we been so well equip-

ped. Some eighty thousand patients are at the moment occupying sanatorium beds, which means not only that eighty thousand persons are being given their chance, but also that as many potential foci of infection are removed from the susceptible community. More thousands, graduates from tuberculosis institutions, are exerting their wholesome influence wherever they may be. The sanatorium is doing "business as usual," in fact, almost 1,000 new beds have been added (in the U. S. A.) during the past year. Nor has there been an appreciable lessening of clinic and medical activities. Greater skill and precision in diagnosis and treatment are practiced by the doctor than ever before. Health department budgets in several places have been curtailed, but without seriously lessening the efficiency of the service rendered. Public health nurses' salaries have suffered reduction but not the quality of their work. Tuberculosis associations have trimmed their sails, but the educational and publicity work goes on unabated. Research has not stopped, and demonstrations gaily carry on.

#### *Control Machinery Works*

The machinery has clicked on despite the depression. The fact that this "variable" has *not* changed (except for the better) whereas the other traditional variable, namely, the economic factor, has changed, and that, in the fact of this, the tuberculosis rate has not increased, is indirect but persuasive proof of the efficacy of our present method of attacking tuberculosis.

Epidemiology teaches that human skill apparently avails little during the height of an epidemic. But when the foci of infection begin to decrease in number, organized effort bears fruit and accelerates the decline. When the disease foci are finally reduced to a minimum number, the epidemic is "under control." Has the age-old epidemic of tuberculosis reached the point where the active cases are so few that the disease may be "controlled" regardless of unfavorable circumstances?

Whatever the answer,—the danger of overconfidence must be avoided. Human nature, notoriously fitful and fickle, must be reckoned with. Experience shows that a populace plagued by a disease enemy may be roused to such a pitch as to depress the danger to a

vanishing point. When the threat lessens, interest lags, vigilance relaxes, and then the enemy sweeps once more into the unprotected ranks. For this reason the history of smallpox since Jenner's time is one of sporadic recurrences alternating with periods of quiescence, but never of complete conquest.

The anti-tuberculosis crusading spirit of by-gone days drew its power chiefly from deep emotion. As the stimulating reminders of the

disease have grown fewer, interest has lessened. It is necessary in these days to replace the old fire with a persistence born of intellectual understanding. For this, leadership of the medical profession is essential. The fact that the traditional and powerful contributing causes of tuberculosis may now be, and are presumably being, "neutralized" by medical skill in diagnosis and treatment, is a tribute to scientific medicine and its practitioners.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "HYPERTHYROIDISM IN CHILDREN"

While hyperthyroidism in children is not common, it occurs sufficiently often to warrant our consideration. There is but little mention of it in the literature, however Dinsmore at the Cleveland Clinic has just reported a series of 57 cases in the Journal of the American Medical Association Vol. 99 page 636 August 20, 1932. These children are under the age of 14 years, in one case the disease is known to have been present since the age of 2 years.

In a number of cases there was hyperthyroidism in some other member of the family. The so-called constitutional factor is probably not important because in nearly every case the child was said to be perfectly healthy until the onset of the disease. In some cases the disease followed an infection such as scarlet fever, whooping cough, or pyelitis.

The symptomatology is very similar to that in adults. Enlargement of the neck, nervousness and tachycardia are outstanding and are generally the first to appear. Exophthalmos is the rule. The other prominent symptoms are loss of weight, increased appetite, tremor, and irritability. The diagnosis is not difficult in most cases. Estimations of the basal metabolism has been unsatisfactory due to the difficulty of obtaining a satisfactory test and also to the great variations in the interpretations of the result according to the different standards in use. Formerly it was the practice to ligate the superior thyroid arteries in these cases and wait three months before the removal of

the gland. Since the advent of the preoperative use of the compound tincture of iodine it has been possible to perform a lobectomy or a thyroidectomy in practically every case at the first operation. However as the improvement which follows ligations is very definite, this procedure should still be the primary operation in severe cases. The difficulty of the operation is increased by the great excitability of these patients and the fact that they do not take general inhalation anesthesia well.

In the series of cases reported there were two deaths, one of which occurred before the advent of the compound tincture of iodine. The results of surgical intervention in this group have been excellent. In an occasional case a slight transient hypothyroidism may develop from time to time. Though the immediate operative scar is hair-line, there is a tendency for it to become red, tender and thick. This keloid formation responds satisfactorily to grenz rays.

At first there was considerable conjecture regarding the ultimate outcome of these patients having had such a radical procedure as thyroidectomy during the developmental stage. The author has followed a number of these children through high school and college. He has found them perfectly normal in every respect.

EDITOR'S NOTE. Hyperthyroidism in children is of the exophthalmic type and the gland is hypertrophied and hyperplastic. Though adenomata of the thyroid gland occur frequently in children, I do not recall a case of severe hyperthyroidism associated with this condition.

## INTERNAL MEDICINE

J. H. Cannon, M. D., F. A. C. P., Charleston, S. C.

### UNUSUAL MANIFESTATIONS OF RHEUMATIC FEVER IN RELATION TO THE NEWER CONCEPTS OF THIS DISEASE

By Dr. Robert F. Loeb

Rheumatic Fever when expressed by an acute febrile, migratory, polyarthritis and followed by pericarditis and endocarditis offers little difficulty in its recognition. When its manifestations are obscure and expressed by symptoms or signs other than those above, and especially in the absence of arthritis, its recognition becomes more difficult. That it does very commonly occur minus the joint lesions, or with them playing a very minor roll in the symptoms, is being more and more emphasized by those located in that part of the country where it is more common than in the South. In contrast to the comparative infrequency of this disease in our climate, Dr. Loeb states that in the spring months it is not unusual for 30 to 40 per cent of the adult medical beds of the New York Hospitals to be occupied by rheumatic patients, and the statistics of the pathologists show that 1 of 12 patients going to autopsy at Presbyterian Hospital, that city, show lesions of rheumatic disease.

He states that it is "not his purpose to dwell upon the fact that in the first decade of life, skin lesions including erythema exudativa and marginatum, urticaria, subcutaneous nodules, chorea, pericarditis, purpura, pleurisy, iritis and conjunctivitis are as significant manifestations of rheumatic diseases as are painful red swollen joints. I do, however, wish to emphasize that many of these lesions, as well as others occur so frequently in the absence of joint pains, that our errors in diagnosis have forced us now to consider seriously the possibility of rheumatic disease in all obscure acute illness."

The scope of his paper did not permit extensive discussion of the etiology, but he does mention that the recent work of Coburn adds greatly to the evidence favoring the importance of the haemolytic streptococcus. He emphasizes the role of tissue response to certain antigenic substances as coming to be considered of the utmost importance, and points out the well known similarity of skin and joint manifestations of rheumatic fever to serum disease. He also mentions recent work by Klinge, who has been able to produce "Aschoff-like" bodies as well as joint, endocardial and vascular lesions in rabbits, very similar to those found in man in rheumatic fever by the proper dosage and timing of injections of

normal horse serum, and concludes that the lesions are those of "chronic anaphylaxis" and that the same may be true of human rheumatic disease. This latter, if confirmed, sounds extremely important and helpful to our understanding of the disease mechanism.

Pathologically, the tendency has been to limit the disease to the joints, endo- and myocardium with occasional development of serofibrinous exudate in pericardium and pleurae and subcutaneous nodules in children. He points to the work of Poppenheimer and Von Glahn, who have shown that the disease is accompanied by a characteristic arteritis involving arteries of all sizes, arterioles and sinusoidal capillaries, and that they were able to demonstrate it in over 20 per cent of the cases studied. It is on the basis of these arterial lesions that he offers an explanation for the unusual manifestations exhibited by the following cases:-

Case 1. Patient N. D. age 24. Tonsillitis and poly-arthritis at 20 years, developing fibrinous pericarditis and was found to have mitral and aortic insufficiency with cardiographic evidence of heart muscle damage. Four years later another attack, with B. P. 145 over 0. Aorta not enlarged, and Wasserman negative. Attacks of pains over precordia radiating to both arms. During attacks dyspnoea and orthopnea, B. P. 300 over 0 and 180 over 0 between attacks. Attacks occurred 2 or 3 times a day, promptly relieved by nitroglycerine. After a month gradually became less frequent and milder, finally disappearing. Two years later he was symptomatically well, and working as a window washer in sky scrapers on Wall Street.

Case 2. Similar type of case. Attacks of pain and dyspnoea most marked after a large meal or slight exertion. B. P. 130 over 30 to 0. From 1 to 16 attacks per day. Was operated upon, removing left superior cervical, sympathetic ganglion following which he had 5 of his typical attacks but without pain, dying two days after operation.

Case 3. Rheumatic aortic and mitral insufficiency. B.P. 145 to 160 over 0. Developed deep aching pains in flanks, worse at night. Slight relief from salicylates. Epigastric distress accompanying attacks after meals were relieved by soda bicarb. Anginal pains radiating to left arm, relieved by nitrates. Patient improved, year and half later feeling quite well, except for anginoid attacks and pains in flanks and lumbar region. Another exacerbation of rheumatism was asso-

ciated with repeated angina attacks, and B.P. elevation from 140 over 0 to 225 over 0.

The abstracts of the above histories are sufficiently full for one to note the points Dr. Loeb wishes to emphasize, viz, the pictures in a smouldering or active rheumatic infection of what would be called in older individuals "coronary pain." It will be noted that the attacks were accompanied by sharp rises of B.P. and were relieved by nitrates. He believes that an explanation based upon known pathologic changes, i.e., "Rheumatic Arteritis" is at least attractive, whether from rheumatic involvement of the aorta, or perhaps a generalized vaso-constriction resulting from acute arteritis in a peripheral artery, coronary or otherwise, cannot be stated.

Certain cases of rheumatic disease complain of vague pains which are commonly called "Myositis." The third case history above is an example. In another case illustrating these types of pains, the patient with rheumatic history, double mitral lesion and aortic insufficiency, complained of severe pounding pains in epigastrium and chest, going through to back, perhaps aggravated by respiration. Later nocturnal precordial pain without dyspnoea or palpitation. 12 days later developed pericarditis pleurisy, joint pains, and died 4 days later. At autopsy, not only were the usual manifestations present, but an extensive rheumatic aortitis and arteritis involving the coronary, superior mesenteric, hepatic and splenic arteritis as well as the celiac axis. Dr. Loeb believes that the extensive arteritis demonstrated in this case offers a plausible explanation of the obscure pains seen in many rheumatic cases.

Considering the relation of rheumatic infection to acute nephritis, he points out the frequency with which both of these conditions follow streptococcus, sore throat, and that the present trend of thought leads to the idea that nephritis may be associated with allergic or immune reactions rather than the poisoning of tissues by bacterial products. Klinge's work previously referred to, indicates that rheumatic disease may be the result of similar biological reactions. The association of Mitral Stenosis and Hypertension sometimes seen, has been often commented upon in the literature, and Fahr has attributed malignant sclerosis of kidney to rheumatism as well as lead and syphilis, feeling that rheumatic affection of the smaller renal arteries is of great importance in this condition.

He then quotes the record of three cases of rheumatic infection with definite evidence of acute renal involvement in which 2 of them recovered with subsidence of the rheumatic infection, leaving an occasional trace of albumen, the third dying in uraemic coma, and at post mortem fresh rheumatic valvular lesions were found, and an acute glomerular nephritis. He states that in the past year there were fifteen similar cases in the Presbyterian Hospital alone. However, he does not claim from such data that the two diseases have the same origin, but the importance of vascular pathology in both diseases and the probability that the lesions in both result from altered tissue reaction suggest a relation which will demand attention in future investigation.

Rheumatic pneumonia, a term frequently mentioned in the older English literature, has taken a renewed interest in New York where it is so frequently encountered that their pathologists are making a study of 50 cases, in which curious lung pathology has been found in cases with other lesions of rheumatic fever. Clinically, the condition is characterized by sudden onset and equally rapid disappearance of signs of consolidation in presence of active rheumatic disease, and in absence of any known bacterial agent. He gives two case reports with complete studies, the post mortem finding in one was acute congestion and edema of lungs, the other a bronchopneumonia.

Dr. Loeb feels that while the other conditions mentioned may be related to a rheumatic arteritis, that in the lung condition just mentioned this does not apply, but thinks a likely explanation lies in some curious altered tissue response to an antigenic substance, as a very similar lung picture may be produced by injection intravenously of certain bacterial products into sensitized animals.

It seems more plausible in view of recent work which has demonstrated beyond doubt the existence of local hyperergic states in certain tissues.

Dr. Loeb concludes this most interesting article, by stating that it was not his intention to formulate a theory of rheumatic disease, but merely to emphasize some of the newer concepts prevalent among workers with this disease, and has tried to show how they may serve to explain some of the so called unusual manifestations of rheumatic disease as seen in New York City.

## WOMAN'S AUXILIARY

### South Carolina Medical Association

#### **WOMAN'S AUXILIARY SOUTH CAROLINA MEDICAL ASSOCIATION OFFICERS**

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District 7. Mrs. Dreyfus O. Winter	— Sumter, S. C.
District 8. Mrs. Vance W. Brabham	— Orangeburg, S. C.

The January meeting of the Woman's Auxiliary to the Columbia Medical Society was held on Tuesday afternoon, January the third at the home of Mrs. George Bunch, 1404 Laurel street.

Mrs. D. S. Pope, the president, paid a glowing tribute to Mrs. Pinckney V. Mikell. The Auxiliary stood in silence with bowed heads for a few minutes in respect to her memory. Resolutions on her death were read and adopted.

Reports were given of the Christmas Tree celebrations in the Baptist and Columbia Hospitals through the efforts of Mrs. George Bunch, Mrs. B. W. Kendall and Mrs. C. E. Owens and to them was due in large part the success of the undertaking.

Mrs. Wm. C. Abel, state president, gave a most interesting talk on the Jane Todd Crawford Memorial.

The election of officers to take office next May resulted as follows:

President—Mrs. H. L. Timmons.

Vice-president—Mrs. F. M. Durham.

Secretary—Mrs. Frank Owens.

Treasurer—Mrs. Thomas Pitts.

The next meeting will be held in March.

A most cordial welcome is extended to our new auxiliary. The Auxiliary to the Spartanburg County Medical Association was organized the last of November. Mrs. O. C. Bennett, 655 Rutledge St. is the president. Mrs. R. D. Hill, Pacolet, S. C. is the secretary.

\*Deceased.

The Health Chairman is urging periodic health examinations and asks that you ponder these facts.

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"A Health Examination is a thorough going over of your body by a competent physician; he neglects no system or organ; and he makes whatever laboratory tests are necessary to determine how healthy you are.

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"Because—A disease discovered early is the more likely to be cured quickly.

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**"WHY YOU SHOULD GO TO YOUR FAMILY DOCTOR—**

"Because—He knows you and your family.

"Because—He is interested in you and in your physical welfare.

"Because—He has your confidence.

"Because—He knows your mental and physical peculiarities.

"Because—He can follow you up from year to year.

"Because—He lives along with you.

"Go to your doctor before he has to come to you."

A quotation from a talk by the late Mrs. Walter Jackson Freeman is well worth reading.

"We hear much of the inevitable sacrifices of the doctor's wife, only too well known to us all, but what of her rewards? Here again the Auxiliary has the answer. Not only does it offer her unrivalled opportunities for the service of humanity, but by that very service a new bond of sympathy and understanding is created between the doctor and his wife. Again and again do I find mention in the Medical Journals from all parts of the country of the new interest in their husbands' work taken by Auxiliary members, of their better understanding of the imperative de-

mands made on a physician of his greater responsibility as his brother's keeper because of his greater knowledge and skill. There is less jealousy of his profession, less resentment at its demands, greater harmony in the home, and the doctors are not slow in voicing their appreciation of this changing attitude.

The state treasurer, Mrs. L. H. McCalla is sending filing cards to each county Auxiliary. These cards will facilitate the work of keeping

proper membership records.

The cards provide all necessary information for a period of twelve years, and county secretaries are requested to report annually on a form provided for the purpose all changes in the membership list. A section on Administration will be added to the State Presidents' Handbook and the importance of compliance with the plans for systematizing and simplifying the work of all your officers, county, state and national, cannot be overemphasized.

## SOCIETY REPORTS

### PROCEEDINGS OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, WHICH WAS HELD AT ROPER HOSPITAL, TUESDAY EVENING, JANUARY 10th, 1933, at 8:30 O'CLOCK.

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: Beckman; Burn; Cannon; Cathcart; Dease; de Saussure; Illope; Jackson; F. B. Johnson; W. H. Johnson; Maguire; Mood; Moore; O'Driscoll; Peeples; Prioleau; Rudisill; Rutledge; Sams; W. A. Smith; W. H. Speissegger; E. W. Townsend; J. F. Townsend; Waring. (24).

Guests: Captain J. F. Murphy and Lieutenant W. S. Sargent, of the Naval Hospital.

The minutes of the meeting of December 27th were read and confirmed.

Dr. G. McF. Mood, Chairman of the Board of Commissioners, again submitted the annual report of the Board of Commissioners for 1931. Dr. Mood stated that typewritten copies of the report were in the hands of each member and he would not read it, but would simply direct attention to a few of the salient points, especially in regard to the finances of the hospital. Doctors Rutledge, Beckman, Sams, Cannon and Prioleau asked questions about the report and discussed some features of it. It was moved that the Report of the Board of Commissioners be received as information and filed, and that the Board be thanked by the Society for their splendid services in the past year. This was seconded and carried.

The Special Order of Business, the Report of the Board of Finance, was then taken up.

Dr. R. S. Cathcart, Chairman of the Board of Finance, submitted the annual report.

At the conclusion of the report, Dr. Edward Rutledge requested information as to what decrease had taken place in the securities held by the Board of Finance. Dr. Cathcart replied that there was no decrease, that the loss sustained was due to depreciation in real estate values in Philadelphia. He also stated that the Board hoped eventually to recover some of the losses as there was a suit pending against the City of Philadelphia for damage done some of the property owned jointly by the Presbyterian Hospital and this Society. It was moved, seconded and carried that the report of the Board of Finance be received as information and spread on the minutes, and that the Board be cordially thanked for their excellent services.

The Scientific Meeting was called immediately after the Special Order of Business was concluded. Under Case Report, Dr. R. M. Hope reported four cases of esophageal obstruction, each with a different cause. This was discussed by Dr. Rudisill.

The paper of the evening was read by Dr. W. A. Smith and Dr. Hillyer Rudisill, on Atelectasis. This was discussed by Doctors Prioleau, Rutledge and Steinberg, Dr. Smith closing.

There being no further business, the meeting adjourned.

W. A. Smith, Secretary.

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# The Journal of the South Carolina Medical Association

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NO. 3

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# The Journal OF THE South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

EDGAR A. HINES, M.D., F.A.C.P., Editor-in-Chief, Seneca, S. C.—EDGAR A. HINES, Jr., B.S., M.D., Rochester, Minnesota, Assistant to the Editor

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B. F. Wyman, M.D., Columbia, S. C.

## EDITORIAL

### HIGH SPOTS OF THE SPARTANBURG MEETING

#### OUR GUESTS

President J. R. Young has been exceedingly fortunate in the selection of the invited guests this year. The following distinguished men have accepted his invitation to be present:

#### DR. OLIN WEST

South Carolina has never been honored by a visit from the present Secretary and General Manager of the American Medical Association. This year Dr. West who occupies one of the most exalted positions possible for any medical man will be with us. Dr. West will speak at the great public health meeting to be held on Wednesday night, April 19.

#### DR. WILLIAM DAVID HAGGARD

Dr. Haggard is one of the best known surgeons in America. He is past President of the

American Medical Association, a past President of the Inter-State Post Graduate Assembly and at present President of the American College of Surgeons. His honors have been too numerous to mention in a small space. He is Professor of Surgery at Vanderbilt University and will be welcomed by many of his former students now living in South Carolina. Dr. Haggard is the most fascinating orator in American medicine.

#### DR. PAUL P. McCAIN

Dr. McCain is one of the most eminent authorities on tuberculosis in this country. For many years he has been at the head of the North Carolina Tuberculosis Sanatorium. Dr. McCain is no stranger in South Carolina having been born and reared at Due West. His message will be particularly addressed to the general practitioner.

### THE WOMAN'S AUXILIARY

There has been an increasing attendance of the Woman's Auxiliary for a number of years. The program of this important organization bids fair to be an especially this year.

### PUBLIC HEALTH SOCIETY

One of the largest and most vigorous of the State Public Health Associations is that which meets annually at the same time of the South Carolina Medical Association.

### COLLEGE HYGIENISTS

One of the newer societies with an increasing hold on the health problems of the youth of the country is the association of medical men and women connected with the various colleges. This organization will have a meeting at a convenient hour not to conflict with the general program of the State Association.

### ENTERTAINMENT

The plans for a most delightful program of simple dignified and attractive entertainments are about complete. The President's reception and ball on the evening of April 20 will be looked forward to with keen interest. One of the spectacular features of Spartanburg's musical attractions is the men's chorus. This particular organization is famed far beyond the local community for its extraordinary talent. It is probable that this brilliant chorus will be heard at the public health meeting on Wednesday night.

### CLINICS

A tentative program of interesting clinics is in the hands of the local committee. Many of our members will recall the unusual success of the clinics put on by the Spartanburg physicians and their guests the last time the State Medical Association met there. Properly sandwiched in with the general program clinics are nearly always an added inducement for a large attendance. Many physicians care little for a paper reading program but are highly enthusiastic when a really good clinic is available.

### HOTELS

The Cleveland Hotel will be the Headquarters of the Association. This hotel is large enough not only to take care of the majority of the members of the Association but will pro-

vide ample space for the commercial and scientific exhibits as well as meeting halls and committee rooms. Other hotels approved by the local committee to care for the majority are The Franklin and The Gresham.

### HOUSE OF DELEGATES

The House of Delegates will convene Tuesday night April 18. The usual reports of standing committees, the reports of Councilors, the reports of special committees will follow the routine order of business. It is expected that economic problems will occupy a prominent place on the program. It is most fortunate that these matters may be handled by a delegated body and be completed before the scientific session is called. The election of officers and the selection of a place of meeting for the next year closes the program of the House of Delegates.

### PRELIMINARY PROGRAM

APRIL 18, 19, 20

Meeting called to order by the President—9 A. M. April 19.

Invocation.

Address of Welcome by the President of the Spartanburg County Medical Society.

Response by Dr. R. E. Abell, President Elect of the South Carolina Medical Association

Announcements.

Presentation of fraternal delegates and guests.

President's Address

By Dr. J. R. Young, Anderson, S. C.  
Papers

(Note: This Program is to be rearranged).  
Reading time 15 minutes: discussion 5 minutes

#### Symposium on Traumatic Surgery

1.

Statistical Report of Accidents in South Carolina.

By Dr. Frank Wrenn, Anderson, S. C.

2.

The Treatment of Skull and Brain Injuries.

By Dr. A. J. Buist, Charleston, S. C.

3.

The Management of Roadside Injuries.

By Dr. James McLeod, Florence, S. C.

4.

The Treatment of Traumatic Tetanus. Report of Five Cases.

By Dr. C. O. Bates, Greenville, S. C.

#### DISCUSSION

5.

Some Recent Concepts Concerning Essential Hypertension.

By Dr. Edgar A. Hines, Jr., Rochester, Minnesota.

6.

Chronic Empyema  
By Dr. George Bunch, Columbia, S. C.

7.

Parinaud's Conjunctivitis; Report of a Case.  
By Dr. T. R. Gaines, Anderson, S. C.

8.

Bronchoscopic Review (moving pictures).  
By Dr. E. W. Carpenter, Greenville, S. C.

9.

Post-Operative Atelectasis  
By Dr. A. E. Baker, Jr. Charleston, S. C.

22.

Technique of Contraceptives  
By Dr. Jack Parker, Greenville, S. C.

23.

A Dermatologic Clinic  
By Dr. J. R. Allison, Columbia, S. C.

24.

A talk by Dr. Walter Clarke of the American Social Hygiene Association  
Subject unannounced.

25

Appendicitis—Is the Mortality Increasing?  
By Dr. J. S. Rhame, Charleston, S. C.

10.

Recent Advances in X-ray as an Aid in Diagnosis

By Dr. Floyd Rodgers, Columbia, S. C.

11.

The Treatment of Diabetes

By Dr. F. E. Zemp, Columbia, S. C.

12.

The Anemias

By Dr. J. Heyward Gibbes, Columbia, S. C.

13.

The Treatment of Infectious Diseases in Children

By Dr. J. P. Price, Florence, S. C.

14.

The Treatment of Gonorrhea From the Standpoint of the General Practitioner

By Dr. James Whaley, Charleston, S. C.

15.

Eye Injuries

By Dr. C. L. Kibler, Columbia, S. C.

16.

Childhood Tuberculosis

By Dr. W. G. Byerly, State Park, S. C.

17.

The Modern Open Method of Handling Certain Fractures

By Dr. Julius Taylor, Columbia, S. C.

18.

Buergers Disease (including the complete treatment, both medical and surgical)

By Dr. A. T. Moore, Columbia, S. C.

19.

The Relation of Focal Infection to Chronic ill Health

By Dr. B. C. Bishop, Greenville, S. C.

20.

An Interesting Problem in the After Care of Hemorrhoidectomies

By Drs. T. G. Brockman and Sylvester Cain, Jr., Greenville, S. C.

21.

Congenital Hydrocephalus

By Dr. R. G. Doughty, Columbia, S. C.

(Tentative)

PROGRAM SOUTH CAROLINA PUBLIC  
HEALTH ASSOCIATION CLEVELAND  
HOTEL, SPARTANBURG, S. C.  
APRIL 18, 1933, 10:00 A. M.

Meeting called to order by President, John B. Setzler, M.D., Medical Director, Carolina Life Insurance Company, Columbia, S. C.

Invocation—

Address of Welcome—Mayor of Spartanburg.

Address of Welcome—President Spartanburg Medical Society.

Greetings—James R. Young, M.D., President South Carolina Medical Association, Anderson, S. C.

Response—E. A. Hines, M.D., Vice Chairman State Board of Health, Seneca.

Remarks, and Appointment of Committees—President of Association.

The Necessity for Standards in Public Health Nursing

Miss Margaret Brinkman, R. N., Supervisor of Nurses, County Health Department, Spartanburg, S. C.

(Subject to be announced)

E. P. White, M.D., County Health Officer, Gaffney, S. C.

(Subject to be announced)—

Robert E. Abel, M.D., President-Elect South Carolina Medical Association, Chester, S. C.

The Place of Biologicals in the Public Health Program

Leon Banov, M.D., County Health Officer, Charleston, S. C.

Discussion opened—

Thomas D. Dotterer, M.D., Columbia, S. C.

Proper Sanitation in Prevention of Typhoid Fever

A. E. Legare, C. E., State Sanitary Engineer, Columbia, S. C.

Preventive Pediatrics

William A. Mulherin, M.D., (Invited Guest), Augusta, Ga.

How Public Health Can Be Sold to the People

James A. Hayne, M.D., Secretary State Board  
of Health, Columbia, S. C.

Recess 1:00-1:30.

**LUNCHEON**

**Business Meeting—**

Reading of Minutes of Last Meeting

Treasurer's Report

**Committee Reports:**

Executive, Membership, Auditing

**Miscellaneous Business:**

Old, New, Courtesy Resolutions

Report of Nominating Committee

Election of Officers

Adjournment.

**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, JANUARY**

24th, 1933, AT 8:30 O'CLOCK

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: A. E. Baker; B. R. Baker; Banov; Beach; Bowers; A. J. Buist; A. J. Buist, Jr.; Cannon; Cathcart; Chamberlain; Culbreath; de Saussure; Gantt; F. B. Johnson; W. H. Johnson; Lynch; McCrady; McInnes; Maguire; Mazzyck; Mitchell; Mood; O'Driscoll; F. L. Parker; Peeples; J. J. Ravenel; W. J. Ravenel; Rhame; Richards; Rudisill; Rutledge; Sanders; Scott; W. A. Smith; W. H. Speissegger; E. W. Townsend; H. F. Townsend; Waring; Whaley; I. R. Wilson; Robert Wilson; Zerbst. (42).

Guests: Dr. W. S. Simpson, of Rock Hill; Dr. Brown of Walterboro; Dr. Sylvia Allen; Dr. Boatwright; Dr. R. E. Remington; Mr. F. O. Bates, Superintendent of Roper Hospital; Mr. G. L. B. Rivers, President of the Chamber of Commerce; and Dr. W. S. Rankin, Director of the Duke Foundation.

The minutes of the meeting of January 10th were read and confirmed.

The Scientific Program was called at 9:00 P. M.

At the request of the President, Dr. K. M. Lynch introduced Dr. W. S. Rankin, Director of the Duke Foundation, in a most appropriate and delightful manner. Dr. Rankin gave an able and interesting address on the "Medical Service Program of the Duke Foundation."

At the conclusion of Dr. Rankin's address the meeting adjourned.

W. Atmar Smith,  
Secretary.

**RIDGE MEDICAL SOCIETY MEETING**

At a recent meeting of the Society Dr. D. B. Frontis acted as temporary chairman.

Dr. R. H. Timmerman read a paper on angina-pectoris, which was discussed by Drs. Oxner, Asbill and Ridgell.

Drs. Able, Ballenger and W. P. Timmerman gave resumes of their observations and impressions of the recent meeting of the Tri State Medical Association in Greenville which they attended.

These reports elicited considerable discussion and narration of experiences by Drs. Asbill and Frontis.

Various amusing anecdotes and experiences were narrated by Drs. Asbill, Frontis and Ballenger.

Dr. Benj. Wyman of the State Board of Health read an instructive paper on various phases of public health work with special reference to the desirability and necessity of educating the public along the lines of protecting people from disease and the preservation of good health.

Dr. Asbill in discussing Dr. Wyman's address discussed airbaths, ventilation, clothing, etc., and gave vivid illustrations.

The following were named delegates to the State Medical Association and were authorized to name their alternates.

Dr. A. R. Nicholson, Edgefield, S. C.

Dr. J. D. Waters, Saluda, S. C.

Dr. A. L. Ballenger, Batesburg, S. C.

Supper was served in the Rutland Hotel.

## ORIGINAL ARTICLES

### THE TRAINING OF DOCTORS IN SOUTH CAROLINA

*Kenneth M. Lynch, M.D., LL.D., Charleston,  
S. C.*

Address before the Rotary Club, Columbia,  
S. C., March 6, 1933. Broadcast, Radio Sta-  
tion, WIS, Columbia.

Because of the urgent practical importance of the subject for discussion I am glad of an opportunity to present the matter of the training of doctors in South Carolina to practical men, men of the class who have the greatest influence on public thought and action.

It is said that there are two certainties in this world, death and taxes, and it appears that we are more fearful of taxes than we are of death.

I have no desire to place myself in the position of an alarmist nor do I consider that what I shall state can so accuse me, but in order to bring out the strength of my premise in the necessity of proper training for those who are to guard our health and care for us in our illness I intend to state as cold facts some things which appear to need some attention at the present time.

During this period of stress health is practically the only condition about the life of man which has not suffered. Why?

During the past generation or so we have seen the diseases which formerly destroyed our babies, our children, and our young manhood and womanhood so controlled that most of us of the present day have little thought and can have little conception of what they once meant. Why?

We have seen in very recent years the opening of great areas of the world's lands to healthful occupation where formerly disease frustrated every effort of the industrial ingenuity of man. Why?

We have built and continued great centers of industry and civilization without fear of the great epidemics which formerly decimated or

obliterated such congregations of people. Why?

Since 1850 the percentage of men in active life over 50 years of age has doubled. To make a practical application, taking this gathering as an illustration, many of those over 50 among us could not have been here at a comparable meeting before 1850. Why?

The answer to the repeated question and to many others of the same order, in case it may not be obvious already, lies in the practical accomplishments of medicine, mainly of the last fifty years, based upon scientific attainments during a similar period. You will find that progress in medicine during this recent period has accomplished more for the health and happiness and life of man than in all of the preceding thousands of years of his existence. You will also find that this same period corresponds to the improvement in training of scientific medical personnel, to proper support of scientific medical education.

But I would not attempt to mislead you, the Utopia of health is not yet here, the surface of beneficial knowledge has hardly been scratched. We hear glib talk of vitamins and such. As yet in the science of nutrition, of food values in health and disease, we are but babes in the woods. Further, those of us here today and all people of comparable age face the certainty of one of those destroyers of mature life, heart and blood vessel disease, or cancer.

Greater measures of health are still to be purchased, and will be purchased as we intelligently seek them.

Of recent times we have heard much discussion of medical care and the costs involved. "In discussing the problems of adequate medical care of a people and in visualizing the individual needs to be met, the first and greatest emphasis must be put upon the necessity of competent physicians who are familiar with current knowledge regarding the prevention, diagnosis and treatment of disease, and who will be kept familiar with growing knowledge."

"Many enthusiasts for the organization of medical services fail to appreciate fully that the successful development of adequate medical services among any people depends in the last analysis upon the training and ability of the professional personnel."

Only through sufficient number of properly trained physicians can a State expect to meet its responsibility for the care and prevention of illness and the protection of health. There is no substitute for this essential feature and there is no way to dodge the issue.

For about 110 years the need of physicians in this State has been largely supplied by the Medical College of the State of South Carolina. During the major part of its history this institution was carried on by the physicians of Charleston. When medical progress reached the point where it could no longer continue satisfactorily under these auspices the State properly assumed its control and support. Under the State it has continued its honorable progress to the present time. It has supplied to the State some 50 per cent of its doctors, and of recent years 75 per cent, almost 90 per cent of whom have gone into general practice and without whom the general population, particularly in the smaller towns, would soon be seriously underprovided with medical attention. South Carolina has the lowest ratio of physicians to population of any State. The national average is 1 physician to 800 people. In South Carolina it is 1 to 1425, and in the 32 counties having only towns of about 5000 population or less it is 1 to 1905. I understand that in a few counties it is much lower, in one or two about one physician to some 3500 people.

The provision of properly trained physicians is accomplished in South Carolina at a phenomenally low cost, much lower than is generally the case—for several reasons

1. The Medical College plant has cost the State practically nothing.

2. A 325 bed teaching hospital is supplied free of cost to the State, through the continued interest of the organized physicians of Charleston, whereas in other medical teaching centers the hospital essential to the purpose commonly costs more than the medical school proper, both to build and to operate. The State is

thus saved a capital outlay of probably about a million dollars and an annual operating expense of about \$150,000.

Further, the majority of the Faculty, composing those who practice, give their time and professional services, at no inconsiderable sacrifice, free of cost to the State; while the salaries paid by the State to those employed on a full time basis are very low compared to like positions elsewhere. It is not a school of free tuition, the prospective physician is at the present paying nearly half the cost of its operation. Without adequate support from the State our prospective physicians would find it exceedingly difficult and very expensive to obtain their medical education and they would take away with them to expend elsewhere more than the State now subsidizes their training. Many would find it impossible to study medicine, and they would generally be of those whom we expect to supply the greatest need, i. e., in the smaller communities. In other words, in the training of her doctors not only is the State favored by a gift of more than half its actual cost, not only does the State operate a service essential to the well being of her people, but actually in doing so retains within her borders more of her citizens money than is appropriated for the purpose. The service, in other words, pays its own way, the profit to the State in supplying the people with adequately prepared doctors is so great that any reduction to the concrete basis of figures would be of such proportions as to carry beyond conception, and yet would not be exaggerated. I ask you as practical business people to analyze that sort of a strictly business proposition.

The appropriation from the State for the support of the Medical College was never extravagant. At its best it was much below the general cost of such a service. Wherever we may have spent extravagantly, and therefore unwisely, it was not here, and it has never been sought here.

During the past two years or so the State's support of the college has been reduced from this very modest amount by approximately 45 per cent. It is now proposed that a further reduction of approximately 40 per cent be made, making the total reduction about 68 per cent,

rather than 50 per cent as it is being called. The medical profession has repeatedly warned of the danger and of the ultimate destructiveness of such a policy.

It has been asked, "What are we going to use for money?" The wording may appropriately be changed to say, what are we going to use money for? What is it that we want money for? Surely we would deny that it is for the misers love of money itself, as some of our critics accuse. What is it that we would purchase with money if it is not that primary and greatest blessing which life may have, health? We are purchasing health at the present time in ever increasing measure, much beyond casual conception, at a market price of an infinitesimal part of the actual calculable return, to say nothing of the incalculable benefits received in the form of reduction of mental and physical suffering. The cost to the people of South Carolina of assuring themselves competent medical service was about 8 cents per head at its highest—less than the cost of a package of cheap cigarettes. Last year it cost approximately 4 cents—less than a nickel. We would jeopardize, perhaps destroy, this service for less than the price of an ice cream cone apiece. What is it that a nickel will buy of comparable value?

When we speak of cutting costs by 50 per cent, or 68 per cent as we would here be doing, we must either mean that our health has been 100 per cent (or 200 per cent) more than is needed, that our doctors are 100 per cent (or 200 per cent) too good, or that it is to our better interest to get along with 50 per cent (or 32 per cent) of the health which we have obtained and doctors only 50 per cent (or 32 per cent) as good as they may be. The medical profession has said that it means more than this, that it means the disintegration of a medical training center, that there is no such thing as a medical school 50 per cent or even 90 per cent of what it should be. The law of the State and of all others rightly denies to graduates of schools not up to set standards the right to practise. Those specified standards are such as to guarantee to the citizens that their physicians have at least had the proper education, and their cost, while varying somewhat in ac-

cord with costs in general, can be reduced no lower than apparatus and materials can be bought and high grade professional personnel can be employed.

No one here, no intelligent person, thinks that his condition and that of his family would be bettered with only 50 per cent of their present prospect for health. No one wants an incompetent doctor. Rather, we all know that medical service is still far below what we need and shall expect of it. While I am as interested as anyone in the reasonable reduction of the costs of government, in the elimination of the waste and unnecessary expense of government, I am quite certain that unless this civilization shall be destroyed the public costs of health will grow, by reason of "irresistable forces," because the opportunity to purchase increasing health will come with increasing knowledge.

Reduced to that remarkable thing called money, "what is it that gives our property such value as it has?" Is it not the things which we collectively provide, because no individual could otherwise afford them, those services which we have sought, that our lives may be lived in greater comfort and happiness and less subject to disaster? Of what value to you or to anyone would similar property be in an unhealthful region where you and your family were commonly exposed to dangers of preventable disease about which you now have little or no concern, in a land where competent physicians could not be had?

This is not a time for foolish optimism nor for demoralizing pessimism, but for studious analysis and the exercise of discriminating judgment, that economy shall be at the expense of waste and extravagancies and not at the unnecessary sacrifice of fundamentals, that public as well as private reduction of expenses, both of which have become necessary, shall be wisely done and not merely on the plan of mathematical and arbitrary reduction of all things as if they are of equal value.

What householder reducing his or her budget to fit a reduced purse would do it on the plan of a certain percentage for all items rather than in accordance with the value of each, even to the elimination of some for the sake of preserving the necessities?

South Carolina cannot and I am sure does not desire to evade the established responsibility of assuring the provision of the fundamental factor in the preservation and restoration of health for her people. No other commonwealth is going to assume that responsibility for us, and through a search of over a century no philanthropist to assume it has yet been discovered. It is for us and for others of our kind throughout the commonwealth to see to it that the disturbed state of mind of the day does not lead, as Professor Josiah Morse has put it, to a "slaughter" of those fundamental services which have given to our property what value it has and which allow us to raise our children and live in a state of health and happiness never known before; to see to it that it shall not lead to destruction of the accomplishments of our fathers, our heritage from the fruits of the struggle of countless ages.

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#### \*ACUTE POLIOMYELITIS

By William Weston, Jr., M.D., Columbia, S. C.

Underwood in 1787 is given credit for describing a case under "Treatise on Diseases of Children" in which he describes, "The Debility of the Lower Extremities." Mitchell reviews this condition in the skeleton of an Egyptian mummy dating back to 3,700 B. C. In 1816 Jorg wrote a fairly accurate description of the acute onset but the best description of this condition was given by Jacob von Heine, an orthopedic surgeon in Camstadt in 1838.

The pathology of the disease was studied by Strumpell, Pierre Marie and Medin. The disease has been called at times Heine-Medin disease. Infantile paralysis occurred sporadically for a number of years before it was recognized as an epidemic disease and in 1843 Colmer described an epidemic in Louisiana.

This disease occurs most where the population is settled thickest and we have this advantage in the South where it is sparsely settled. Though not free from this disease we have very little comparatively. The greatest epidemic in this country occurred in 1916 where

in New York state there were 13,164.

The exact mode of transmission of this disease is not known, but the review of the literature reveals that it is carried directly from one person to another and there are known carriers who do not suffer with the disease themselves, but transmit it to others. The disease is disseminated from the secretions of the nasopharyngeal spaces. As the virus has been demonstrated in the mucus membranes of the nasopharynx not only during the acute period of the disease but in some cases months after the convalescence and the virus has been demonstrated in the naso-pharyngeal washings from normal individuals. The virus is also disseminated in such vehicles as milk. Forty per cent of the rural districts and 87 per cent of the urban districts were endowed with immuned serum.

Causative agents in poliomyelitis is a filtrable virus which was demonstrated in 1909 by Flexner and Lewis in America and Landstiner and Levaditi in Europe in the same year. The size of this virus is probably five to ten diameters smaller than the smallest body which can be seen by the highest powered microscope. This virus probably lives for some time as Clark and his associates in 1930 found the virus active after exposure of more than four months to a saturated solution of sodium chloride (it resists complete dessication for at least thirty days). (While X-Rays seem to be without effect upon the virus.) Shultz has found that exposure to ultra violet rays from a Cole quartz lamp inactivates it in less than three minutes. Emerson in 1932 has reported the cultivation of an organism which he believes may be the causal agent of this disease but no one else has been able to cultivate the virus except on living tissue cultures. So Everson's work cannot be accepted until it is substantiated.

The belief as the text books have written until the past year that the first evidence of the pathological changes in the affected parts of poliomyelitis was a hyperemia of the meninges and collection of a large number of small mononuclear cells, probably lymphocytes, has been altered and we now know that the nerve cells themselves are affected immediately. In quoting from Shultz: "The virus in reality travels to the different levels of the central nervous

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\*Read before the Columbia Medical Society, Columbia, S. C., October 10, 1932.

system by the way of the axis cylinders of nerves or nerve paths. After reaching the olfactory bulb from the nasopharyngeal vault. It evidently passes to the brain by the axis of the olfactory bulb and from there to the cord by the motor fibers of the pyramidal tract." The recent work has shown what is termed as "inclusion bodies" which are peculiar reaction products within the affected cells.

75 per cent of the population will reach 20 years of age immune to poliomyelitis. However as the epidemics increase from time to time they seem to attack older individuals and in the epidemic of 1927 there were few cases under 6 years of age comparatively and I saw a number of cases between 12 and 25 at the Willard Parker Hospital during August and September of 1927. Where one has been affected with infantile paralysis they become immune and remain immune which is true of all virus infections. This indicates that the virus is probably present in the tissues for some time after recovery or where damage persists.

Cramer and co-workers state that infants born of immune mothers are immune to poliomyelitis for at least the early months of life. A neutralization test shows that nine-tenths of the urban population become immune by time the adult life is reached.

The onset of the symptoms are fever, headache and vomiting. The patient is usually drowsy and when aroused is irritable. Very early there is stiffness, especially of the spine and there is now the "spine sign" which consists of a marked stiffness of the spine with inability to flex chin on knees while the patient has a characteristic mode of helping himself sit up by using elbows and hands to raise himself which are posterior to the body. The shoulder sign is when shoulders are elevated the head falls back and the patient is unable to raise his head. There are said to be two stages, the first stage includes the signs which have been given above and is usually called the abortive type if the disease does not progress further. Should it continue, the temperature instead of remaining normal will become elevated again. This is after the third or fourth day at which time paresthesia is apt to take place and rigidity is more marked with paralysis of the extremities and other parts of the body.

William H. Park of New York has probably been in contact with more infantile paralysis cases than any other one man and he concludes under treatment that the results of the observation "On treated and untreated patients in the pre-paralytic stage of poliomyelitis during the 1931 outbreak do not give any established preference that the serum has any value when given in cases after the cells of the central nervous system are involved." Other workers such as Cramer and Aycock have come to the same conclusion. However, there are some workers such as Amos and Berry, Levinson and others whose statistical reports show that those cases treated with immune sera are greatly benefitted, not only by the less severity and amount of involvement but also in rapidity of recovery.

Since the name of Levinson has been introduced it is well to state what the Levinson test is. A 2 per cent mercuric chloride and a 3 per cent sulpho-salicylic acid solution gives the best results using flat bottom graduated test tubes, 1 cc of spinal fluid with 1 cc of the reagent in test tube. There is a 3 to 1 reduction of proteins in tuberculous meningitis with the mercuric preparation while in other forms of meningitis there is an opposite effect or 3 to 1 reduction in the sulpho salicylic acid solution. In poliomyelitis the reduction changes but little being slightly greater in the mercuric solution but below five miligrams and is not the 3 to 1.

Certainly when in doubt if immune serum can be obtained it should be used intravenously and intraspinally until more information is obtained. Since this disease is at its height from July until mid October and the number of virus is destroyed by ultra violet rays one should think of this method of treatment in preventing poliomyelitis. There have been 555 cases reported in Philadelphia from July 1st to September 14th and schools have been delayed in opening. Out of this number there were 59 deaths. When the least suspicion of a case takes place, strict isolation should immediately ensue with absolute rest and continued rest. The orthopedic treatment of this condition will not be discussed.

#### REPORT OF CASE

G. S. White boy, age 9. Four days before admission to hospital, August 8, 1931, com-

plained of headache, pain in stomach, nausea and vomiting. There was fever. Three days after onset there was definite weakness of both lower extremities, more marked on right. There was hyperesthesia of both extremities and abdomen. Loss of abdominal reflex. On admission to hospital August 8, 1931 temperature was 102 going up to 103 2/5 gradually descending to normal on the 14th and was discharged on August 17th.

While in the hospital boy exhibited stiffness of both legs and much pain on movement and hyperesthesia of both legs. Suggestive Babinski present, knee jerks absent and positive Bruzinski. The knee reflexes soon returned. On the day after admission, August 9th, blood was obtained from M. S. A. who had had infantile paralysis two years previous. 15 cc serum was given intraspinally after removing 20 cc of spinal fluid.

Laboratory: Leuk. 11,400, 76 per cent Polys. 24 per cent Lymph. Spinal fluid cell count 1 cell which was repeated and found the same.

This case was either one of three conditions: (1) Infantile paralysis, abortive type. (2) Acute rheumatism fever. (3) Breakbone fever. It was diagnosed infantile paralysis as the treatment indicated. The boy made a complete recovery and six weeks after onset was leading a normal life.

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#### \*THE DECOMPENSATED HEART

*Hugh Smith, M.D., Greenville, S. C.*

Before discussing the decompensated heart it has seemed proper to spend a few minutes in review of the normal heart, for to fully appreciate an abnormal function an understanding of the normal is necessary. We are seldom aware of the normal heart and for that reason we do not often stop to give it thought. Mechanically there is no other engine so compact and so efficient, and certainly, this little machine, the size of ones fist, deserves our keenest respect and admiration.

In this automotive age practically everyone has some knowledge of the internal combustion

engine. The heart might well be compared to a four cylinder motor of this type. Both have cylinders, valves and electrical systems. The heart has four chambers, acting in pairs and in sequence. Between the chambers are the valves, which must be accurately fitted to perform good work. The electrical system begins with the timer, in the sino-auricular node and spreads through the distributor, along the Bundle of His to the contracting walls. Just as any motor loses efficiency with an impaired electrical system, damaged cylinders or leaking valves, so does the heart. Few of us would drive a car with a damaged motor, but would take it promptly to the garage mechanic for proper repairs. Unfortunately, too many of us pay little attention to our own motor, but go along making unfair demands on it, because its need for rest and repair is not obviously recognized.

While we are thinking mechanically lets try to grasp the amount of work done by the average normal heart at rest. It contracts and relaxes rhythmically 72 times a minute, which is one cycle every 0.8 second. Auricular systole requires 0.1 second; ventricular systole 0.3 second and diastole uses the remaining 0.4 second for rest. At rest the heart output averages 3 to 5 liters per minute. This amounts to 240 liters per hour and 5760 liters (1440 gallons) in 24 hours. Moderate exercise increases this output to 8 or 9 liters per minute or 460 liters an hour. Heavy exercise requires an output up to 20 liters per minute or 1200 liters an hour. Thus we see that the volume output each minute is doubled with moderate exercise and increased up to five times with heavy exercise. A liter of blood weighs about 2 1/4 pounds. At rest the heart is moving 8 to 10 pounds per minute, 480 to 600 pounds an hour, and 12 to 14 thousand pounds each 24 hours. Multiply these figures twice for the work done in moderate exercise and five times for the work done in heavy exercise and you will probably be startled by the results. That one organ the size of ones fist could move so much blood is almost beyond belief.

The heart has its own inherent myogenic activity and will continue to beat with all extrinsic nerves severed. However, the two great sys-

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\*Read before the Oconee County Medical Society, Seneca, S. C., January 19, 1933.

tems, the vagal autonomic and the sympathetic, together called the autonomic nervous system, exert an important influence on heart activity. Increased vagal activity slows heart action and increased sympathetic activity speeds heart action. Normally the two balance each other, but any factor disturbing either results in a direct disturbance in heart behaviour.

Heart volume output can be increased in only two ways. Either the number of contractions per minute are increased, or the output each contraction must be increased. The physical condition and training of the individual has much to do with this. The trained athlete's heart probably meets its extra demands with an increased output per beat, whereas the heart of the untrained man responds with an increased number of beats per minute. Logically, a heart that can step up its output without increasing the rate of activity can do much more work without undue fatigue than the heart which must speed its rate to meet extra demands. This explains why most of us give out so easily on unusual exertion, and should point a lesson of caution to the man of sedentary habits when temptation to overexert appears. In this high speed, nerve racking, emotionally and socially complex age it is no wonder that many hearts wear out. On the other hand, it is a tribute to the organ that any survive the allotted three score and ten years. I agree with Talley(1) who says that "One would like to see a tempo of life again where a man might peruse a book in peace."

In the examination of a heart a proper history is of great value. A few facts of importance would ask if there is a history of rheumatism or its cousins, chorea, tonsillitis, and scarlet fever, or of syphilis, pneumonia or diphtheria. The patient's occupation and his ability or inability to carry on his usual labors is informative, and of course, his response to simple exertion such as climbing stairs, walking and lifting tell us much. If the patient is a child we wish to know if he plays the same games as his friends or if he is distressed with their usual activities.

The subjective symptoms of shortness of breath on slight exertion, of cough on effort, palpitation, pain about the heart and its relation

to activity, indigestion and undue fatigue all point to a careful heart investigation.

The examination of the heart includes (a) inspection for cyanosis, dyspnoea, the apex beat, abnormal pulsations and edema. (b) Palpation, for thrills and shocks and the P. M. I. (c) Percussion, for heart size and contour and for fluid in the chest cavities. Percussion is an art and to be of value must be practised regularly. (d) Auscultation, for tone, rhythm, closures, murmurs and distance. Auscultation is to be done in both the erect and supine positions, and during inspiration and expiration. There are too many cardio-respiratory murmurs mistaken for organic heart disease. The influence of exercise on rhythm and murmurs ought to be determined. (e) Blood pressure readings should be made two or three times before accepted, if found abnormal, as the influence of the psyche must never be underestimated. (f) Exercise tolerance in questionable cases is very often a help. However, in the presence of obvious heart disease there is no purpose in burdening a tired heart with an exercise test. Any diminution of ability to perform work to which the patient has been accustomed requires explanation.

There are other special methods of heart examination which are useful in certain cases, but in the great majority, the simple methods mentioned above serve all needed purposes. Vital capacity; Roentgen-ray or fluoroscopic views, polygraphic and electrocardiographic examinations all have their place in diagnosis. The treatment of a decompensated heart requires very few instruments, a great deal of tact, a thorough knowledge of a few drugs and common sense.

Lets draw the picture of a decompensated heart before taking up its management. We are thinking of the patient with dyspnoea, either on slight activity or at rest, cyanosis, edema, a failing heart, either muscle or valve or rhythm, and a patient physically incapacitated. The history and the examination prove that this patient is ill because of a heart failing to compensate.

The treatment can be divided into four parts (2) and each part best be discussed separately.

1. Physiologic rest and dietotherapy: With

every failing heart absolute rest, preferably in bed is indicated. The diet should be bland and in the presence of marked edema salt should be restricted. Sedatives are indicated from the start. A heart patient needs rest and to enjoy rest a satisfactory sleep is certainly necessary. Simple hypnotics will often meet the demand, but if morphia is required it certainly should be used, for sleep in sufficient amount relieves the heart by lessening emotional strain and by better relaxation of the patient.

An old and time honored diet of sweet milk and soda crackers, the Karrell Diet, is a splendid one for the first two or three days. This diet consists of a glass of milk with a few soda crackers, every four hours during the day, or four feedings. With this simple diet you at once restrict your caloric intake, your total fluids, the salt and proteins. This is often all that is needed to promote diuresis and bring about a rapid elimination of retained fluids. If after three days on this diet, the results are not satisfactory, then we must take up another step in treatment.

2. Digitalis is the drug of choice in these cases. There are many preparations and fancy products on the market derived from this drug, but as far as I am concerned, all could well be discontinued except the tincture, accurately assayed, and the pill of powdered leaf. I have seen mighty few cases where I thought digitalis indicated hypodermically. You can get the results in every case, if not by mouth, by giving it by rectum until it is retained by mouth. I am in accord with Hyman and Fenichel who state that after a long and extensive experience with this drug they have found no indications for its intramuscular or intravenous use and they believe that form of therapy is greatly to be discouraged. They also state that they have never found an idiosyncrasy to the drug.

There is no ready rule of thumb for the dosage of digitalis. One cc of the tincture and one decigram of the Po. leaf are of equivalent value. An average ultimate dose is one cc of the tincture or 0.1 gram of the po. leaf for every ten pounds of body weight. This can be safely given within three or four days, if the patient is seen regularly, at least once in 24 hours. For an average adult of 150 pounds this gives an

approximate dose of 225 minims of the tincture or of 22 1/2 grains of the po. leaf. This total dose might be given one half the first twenty-four hours, as follows: one fourth the total dose and repeat in twelve hours; the following day after seeing the patient, one fourth of the remaining half can be given and repeated in twelve hours; the third day if there is no evidence of definite digitalis effect the other part can be given in two equal doses at twelve hour intervals. Though this is a fairly workable rule, every patient is an individual problem. Give digitalis only for digitalis effect and the original advice of Withering has never been improved on. He said "Let the medicine be continued until it acts either on the kidney, the stomach, the pulse or the bowels—let it be stopped at the first appearance of any of these effects."

3. Mechanical Measures: I am discussing this step before the last because of my experience with the two. It has been impressed on me repeatedly that in the presence of fluid accumulations in the abdomen or in the pleural cavities, diuretics are of very little value until these have been eliminated. The relief of the patient is our first consideration and where there is a large collection of free fluid in either the abdomen or in the pleural cavities, this should be relieved early in the course of treatment. The use of a trocar and cannula with novocaine requires no great skill and the results obtained add hours of happiness and comfort to the patient thus relieved. In tapping the abdomen all the fluid may be safely withdrawn at once. It is comforting to apply afterwards a tight binder to improve splanchnic tone. When you are tapping the pleural cavities it is dangerous to remove too much fluid at one time. Five to six hundred ccs are enough, even though at this point the patient may appear comfortable and desire more withdrawn. To withdraw much more is courting an acute collapse, with either an acute pulmonary edema or cardiac failure, either of which may be the final overload for that patient. It is far wiser to tap the chest every two or three days until the fluid is entirely removed than to chance such an unhappy complication.

4. Diuretics: There are a few, very few,

drugs worthy the title of diuretic. Only in recent years have we been given dependable drugs that will really stimulate the kidneys to increase elimination. Digitalis certainly in some cases has a diuretic effect by improving the general and more specifically the renal circulation. Others have reported good results with urea in a fair proportion of cardiac edemas. I have had no personal experience with it. Within the past few years, however, the new mercurials have been made available, and properly used, such preparations as Salyrgan and Novasurol are very efficient diuretics. Both these drugs are irritating and are best given intravenously. This offers their only disadvantage, as some men hesitate to use intravenous therapy. These mercurials are safely given in the presence of albumen and casts, if there is not too much nitrogen retention as a result of an associated nephritis. The usual dose is one to two cc intravenously at intervals of five to ten days, depending on the rapidity of fluid retention. The acid salts, such as ammonium chloride or nitrate, and calcium chloride, given in ten gram doses daily for several days before the use of the mercurial will greatly increase the diuretic effect of the latter. Occasionally the acid salts alone up to ten grams a day will prove diuretic, and certainly if continued will prolong the interval between indicated doses of Salyrgan.

My experience with the purin diuretics has proven consistently disappointing. Diuretin; theobromine, caffein and theocalcin have all failed to justify their expense in my hands. I might say here that the use of the so called heart stimulants have proven of doubtful value in my experience. Adrenalin is rather drastic and while its effect is fleeting, it is potentially dangerous in the presence of a failing heart. Strychnine exerts its effect through the central nervous system and increases the nervousness of the already excited patient. Camphor in oil is absorbed so slowly that its value seems doubtful to me. Sparteine and Ouabaine have never done more than other more commonly used drugs would have done when I most needed help. In the presence of acute cardiac distress, it has been my firm conviction that morphia and other sedatives do more for the heart by allaying nervousness and quieting the pa-

tient than any other drugs at my command.

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#### \*INTRA-ABDOMINAL TRAUMA FROM NON-PENETRATING WOUNDS

*Douglas Jennings, M.D., Bennettsville, S. C.*

The neurological surgeon blames the automobile for the increased incidence of intracranial injuries and the orthopedic surgeon for that of fractures. The general and abdominal surgeon is confronted with another type of injury which is evidently on the increase. I suppose we shall have to blame this, too, upon the automobile as many of these cases are victims of traffic accidents. I refer to injuries to the viscera within the abdomen without penetration of the abdominal wall. Interest in these conditions depends upon the facts that they are encountered with increasing frequency, that they are not amenable to the ordinary routine study and diagnosis, that their death rate is extremely high, and that their outcome depends upon treatment by prompt surgical measures.

The intra-abdominal structures subject to such injury may be divided into the solid organs which are fixed in position, such as the liver, spleen, pancreas, and diaphragm; and the hollow organs which are less positively fixed, as the stomach, small and large intestine, and urinary bladder.

The liver is a very vascular organ, relatively fixed in position by surrounding structures, enveloped by a delicate capsule, and does not permit of great change in its contour without a break in one or more places in this capsule. It is, at its upper pole, somewhat protected by the thoracic cage but is definitely subject to injury from below where it is unprotected except by soft, easily-displaced tissues.

A few months ago we admitted a colored boy (Colin S.) who had fallen from a wagon and whose abdomen had been crossed by the back wheel of the wagon. He was in extremis when

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brought in from evident internal hemorrhage and died before anything could be done for him. Autopsy revealed the abdomen full of blood and a rent in the liver in which the hand could easily be placed. There was no mark upon the abdominal wall.

The spleen, like the liver, is a highly vascular organ, soft in consistency, enveloped by a delicate capsule, and protected by the thorax above but unprotected below. It is probably most often injured by compression forces upon the abdomen. Sometime ago a young hitch-hiker (L. A. M.) on his way to Florida was thrown from an automobile. In what manner the force of the fall was placed on the abdomen was not known. He was brought to us eighteen hours after the accident and exhibited evidence of fluid in the abdominal cavity with peritoneal irritation. He was immediately given a blood transfusion and the abdomen opened. A large tear in the spleen was sutured and the abdomen drained. After a stormy convalescence, during which enterostomy was necessary for ileus he recovered.

The pancreas is seldom injured, owing to its deep position in the abdomen and to the shelter afforded it by the ribs and the structures which overlie it. A blow which does injure the pancreas generally impinges upon the epigastrium and is directed from before backwards. The head of the pancreas may be crushed against the vertebral column and thus torn. Such a case is illustrated—a young woman (Mrs. C. E. E.) was struck in the epigastrium by the end of a surf board while in sea bathing. She immediately felt faint and was carried several hundred yards to her cottage. There I saw her an hour later. There were no evidences of injury within the abdomen except faintness and slight nausea, and only a small bruise on the abdominal wall. Two hours later she was pale and clammy, suffering nausea and had vomited several times. The abdomen was tender and becoming rigid. Pulse and temperature were elevated. She was carried to the nearest hospital and the abdomen opened. Two small, actively bleeding tears were found in the omentum and about one-half pint of blood was removed from the peritoneal cavity. The omental tears were ligated and the abdomen closed

*with drainage.* A few days later a clear fluid, identified as pancreatic secretion by its trypsin content, drained freely. The fistula thus set up drained for twelve weeks, then closed spontaneously, and immediately a large mass accumulated in the upper abdomen. A diagnosis of pancreatic cyst was made and when the condition interfered with emptying of the stomach operation was advised. At operation we found that the pancreatic fluid had infiltrated the stomach wall down to the mucosa, so that the cyst wall was made up of the gastric muscularis, the transverse colon, and the anterior parietal peritoneum. In removing the cyst it was necessary to partially resect the stomach. This young woman was desperately ill for several months, during which time she repeatedly demonstrated the acidosis attendant upon the loss of alkaline digestive fluids, and gave us many opportunities for observing the acid-alkali balancing efficacy of dextrose in Ringer's solution. She has recovered sufficiently to resume her place in her home.

This case beautifully illustrates the injury to the pancreas from an impinging blow over the epigastrium, and the fact that pancreatic injuries may easily be overlooked, even after the abdomen is opened. In all such abdominal trauma the pancreas should be visualized and carefully searched for injury.

The large and small gut are hollow organs, not fixed in position, frequently distended with gas and intestinal contents, and unsupported by surrounding solid viscera. An injury to the intestine from a non-penetrating force is usually one of two types—either a blow from a small instrument applied to a limited area of the abdominal wall and causing rupture due to crushing of the gut at the point struck; or a force diffusely applied over a greater part or the whole of the abdomen and causing rupture from compression at one of the fixed points of the bowel, the duodeno-jejunal flexure, the ileocecal junction, or the mesentery attachment.

The first type of injury is illustrated by a young boy (B. S. S.) who was sitting on the front of a wagon whipping a mule. The mule's hoof was "planted" in the mid portion of the boy's abdomen causing a veritable "blow-out" of the ileum. The perforation was as large as

a half-dollar and almost divided the gut. This boy was operated upon within two hours after the injury, the ileum resected, and he made an uneventful recovery.

The second type of intestinal injury is portrayed by the case of a little child (Paul B.) who was turned over in an auto, the door of the car pinning him across the abdomen. At first he showed little evidence of intra-abdominal injury but was brought to the hospital for observation. After three hours, the picture was one of extensive peritoneal damage. The abdomen was immediately opened. The jejunum and ileum showed extensive laceration, one segment of the ileum eight inches in length being stripped of its muscular and peritoneal coats leaving a tube of the mucosa only. Two sections of the intestine were resected and the abdomen drained. This boy was very ill for three weeks then recovered nicely.

The site of the intestinal injury depends upon the localization of the damaging force upon the abdomen. Trauma to the large bowel usually results from a blow below the umbilicus. Moynihan calls this section of the abdomen "the dangerous area" because of the greater seriousness of wounds of the large bowel.

Rupture of the urinary bladder from compression forces to the abdomen is not usual, particularly if the bladder be distended when the force is applied. Just a few days ago a very muscular young man (Otis W.) was pinned down by a tractor, the weight being on the abdomen. He showed free hematuria for a few days without other demonstrable evidences of internal injury. The bloody urine cleared up without treatment and he seems to be perfectly well. But bladder injuries are often associated with fractures of the pelvic bone, which will not be discussed as abdominal injuries because they are usually extra-peritoneal. We recently discharged a young man (P. H. M.) who suffered multiple fractures of the pubic and ischial bones with perforation of the bladder and rupture of the posterior urethra. This was also an auto accident.

The treatment of intra-abdominal trauma from forces which often do not leave a mark upon the abdominal wall depends upon the fact

that these cases are real emergencies and should be subjected to immediate laparotomy. The percentage of intestinal perforations particularly which prove fatal is in direct proportion to the time lost in opening the abdomen and repairing the damage. A delay of an hour means that the chances for recovery are greatly lessened. Operation should be done on one's inability to say that internal injury does not exist rather than awaiting signs which enable one to say that damage does exist.

The indication for treatment of ruptured or lacerated liver or spleen is usually the control of internal hemorrhage. The method of dealing with pancreatic injuries is frequently drainage alone, sometimes repair and drainage, *but always drainage*; for the escape into the peritoneal cavity of pancreatic secretion means fat necrosis, digestion of living tissue, and chemical peritonitis. The purpose of the surgical treatment of intestinal injuries is to prevent leakage from the bowel and consequent peritonitis, the lower the lesion in the gut, the more dangerously infective the intestinal contents. Injuries of the mesentery and the blood vessels cause gangrene from interference with the blood supply and secondary perforation of the bowel. Bladder perforations and ruptures require repair and drainage to protect the peritoneum from urinary leakage.

The purpose of this brief discussion of intra-abdominal injury and the recital of these cases is to emphasize that trauma does occur to the structures within the abdomen without external evidence; that such cases are real emergencies requiring immediate laparotomy without time lost in diagnostic study and observation; and that such injuries seem to be occurring with greater frequency, probably due to the increased incidence of traffic accidents.

## DISCUSSION

Dr. Julius H. Taylor, Columbia:

Dr. Jennings has given us a very comprehensive and very common-sense paper on contusion of the abdomen. At the present time, with the very frequent injuries from automobile accidents, this is a most pertinent subject. From those accidents we often have fractures, wounds with extensive hemorrhage, or head injuries that divert our attention from the possibility of injury to the abdominal viscera. Under those conditions we

should look primarily, before even to the head injuries, to the abdomen, on account of the grave significance in any delay in operative diagnostic procedures. Under these conditions, may I say that the first indication is to catheterize your case, looking for a ruptured bladder. That is the first indication, it seems to me, for the treatment of a contusion of the abdomen. After you have satisfied yourself that you have not a rupture of the bladder, then you can look the situation over more calmly and at your leisure.

There are certain symptoms in the abdomen that one should look into. As Dr. Jennings brought out, you may have no evidence of contusion whatever. You will have primarily, first, rigidity. With rigidity of the abdominal muscles, if the injury has been a comparatively slight one, that rigidity in a reasonable length of time will pass off. On the other hand, if you have a grave injury there, the rigidity remains fixed and extreme. The blood count gives you no indication of what is going on until a peritonitis sets in. Often you have an injury there which you think must be very grave, from the symptoms of rigidity, nausea, and vomiting, but you may have no injury whatever to a hollow viscus. On the other hand, you may have hemorrhage between the leaves of the mesentery or may have hemorrhage from the tearing of the mesentery. There may be extreme rigidity from such hemorrhages.

Now, when you have hemorrhage from the mesentery, a very significant reaction takes place. If you have a small hemorrhage of the intestine, you have a limited amount of soiling and a limited degree of reaction to the injury, as compared to a larger rupture. Now, of those smaller ruptures this, to me, is the most important feature of the situation. If you have a small rupture a very significant thing takes place. There is protruded at once a piece of mucosa through that rupture. Then you have the involuntary action of the musculature of that gut, which squeezes down, the mucosa serving as a plug, and there is very little leakage. Under those circumstances you have your rigidity; the symptoms will seem comparatively mild, perhaps; but after a time there is relaxation . . . . .

(Discussion not finished; time called.)

Dr. Marion H. Wyman, Columbia:

Dr. Taylor had two cases recently of automobile accident. One case we cystoscoped that night and proved she had leakage from the bladder. That a woman made an uneventful recovery. The other case was a boy of six years who had extravasation of urine. He was not cystoscoped. He also got well. That proves that you have to treat each case on its own individual merits.

(No further discussion.)

## \*UROGRAPHY IN UTERINE ANOMALIES

*Roger Doughty, M.D., Columbia, S. C., and M. Mosteller, M.D., Columbia, S. C.*

While for many years embryologists have recognized the essentially common origin of the reproductive and urinary systems and their exceedingly close connection throughout their formative stages, clinicians and surgeons have not held this so clearly in mind. The undifferentiated sex glands develop in the urogenital fold along with the Mullerian ducts and in very intimate relation to the metanephros. The Mullerian ducts form the uterus, tubes and vagina and the metanephros the kidneys. It is at once apparent from this that any demonstrated defect in the uterus should immediately suggest the possibility of a defect in the renal system. These formative organs are originally bilateral and a single organ like the uterus is formed by fusion of the two sides. Maldevelopment of one side of the uterus should therefore bring to mind the possibility of a similar situation in the other organs taking their origin from that side.

Though the literature is full of individual reports of isolated abnormalities, it is extremely poor as regards the relationship between uterine and renal anomalies. About the only observations of importance are those made by Guizzetti and Pariset at the University of Parma. In 20,000 autopsies, there were 31 cases of horseshoe kidney. In these 31 in only one instance there was a failure of the Mullerian ducts to develop properly. In 8 cases of ectopic kidney in women there were two which also showed gross uterine defects. There were 27 cases of congenital absence of one kidney and in only one of these was the remaining kidney ectopic. Twelve of the 27 cases were in women and 8 of these showed malformations of the uterus, the other 4 being normal. In all of the 8 cases there was a unicornuate uterus, the homolateral Mullerian duct having failed to develop.

From the above figures it is obvious that we are dealing with an extremely rare situation. Its rarity, however, is more apparent than real, for

comparatively few entirely normal individuals ever have a complete genito-urinary examination, while every one of these sufferers sooner or later have an investigation made.

The various types of uterine anomalies and the surgical importance of a complete renal examination in the presence of a uterine abnormality are exceedingly well illustrated by four cases, which we report briefly. The first case was that of a young girl 15 yrs. of age, who complained of irregular, frequent and profuse menstruation. She was advised to have a dilatation and curettage and to our surprise it was found that she had a complete double vagina, double cervix and double uterus. A vaginal partition ran in an anterior-posterior line. One side was a little larger than the other, and it was evidently this side which had received the finger of the examiner. The partition was removed. On laparotomy a complete double uterus was found, with a fold of the bladder lying between the two bodies. The tubes and ovaries were well developed. A hysterectomy was done, with, of course, relief from the excessive bleeding.

While the ovaries seemed to be normal, this patient has had a most unsatisfactory marital experience, due as she says to the fact that she does not "feel as other women must."

Subsequent to her operation, a skian's x-ray study showed both kidneys and ureters normally placed and of normal size.

This patient illustrates the failure of the Mullerian ducts to unite properly, in that their lumens never fused. In every other respect, however, the development of these ducts and of the metanephros was entirely normal.

Another young woman, 20 yrs. of age, the second case, complained of intermittent pain and a mass in the lower abdomen. She had never menstruated. At operation, a large ovarian cyst on the right side and a smaller cyst of the left ovary were found. The ovaries were elongated; their surface over the normal portion quite smooth and white and the stroma very dark. The tubes were rather rudimentary affairs, attached to a bicornuate uterus. The body of the uterus on each side was a fair sized elongated mass terminating in the cervix. The ovarian cysts were removed. The vag-

ina was normal, but there was very little genital hair. The other secondary sex characteristics, however, were well developed. Following the operation a skian study showed both kidneys and ureters of normal outline.

In this instance there had been a definite failure of the Mullerian ducts to develop in anything like the normal way. The result of this being a primitive representation of uterus, tubes and ovaries. This failure was of about equal proportions on the two sides. On the other hand, the development of the metanephros was in no way impaired with the result that she had two good kidneys.

The third patient, a girl 19 yrs. of age, had a multitude of complaints. She was first seen with a typical acute appendicitis and her appendix was removed. Some two yrs. later she returned and in the course of examinations to determine the cause of a left sided abdominal pain, a skian study was made. A normal right kidney was found, but no outline could be obtained on the left side. Because of the persistence of this pain, an exploratory was done. The right half of the uterus was well developed and the right tube was normal. The left half of the uterus was represented by a cord of tissue about 2 1-2 inches in length, running laterally from the cervix, and with a slight diffuse enlargement near its upper end. At its thickest portion it was about 1-2 cm. in diameter. Attached to its lateral end was a very short rudimentary tube. Both ovaries were elongated downward and were flattened. Their surface was extremely smooth and white; their stroma dark brown. The right kidney was easily palpated and the course of the right ureter beautifully demonstrated, but no vestige of either organ could be found on the left side. A supra-vaginal hysterectomy was done.

In this case there was a practically normal development of the right Mullerian duct and the right metanephron. The left metanephron was either absent or remained vestigial while the left Mullerian duct underwent an abortive development.

We are indebted to Dr. Le Grand Guerry for the privilege of reporting the fourth case. This was a woman 34 yrs. of age, who complained of a mass in her abdomen and pain in

the right lower quadrant. The mass was increasing in size. Her menstruation began at 16 yrs. of age, was irregular, and its duration only one day. At 19 yrs. of age she was operated upon, and following the operation she never menstruated again. On examination, a large, oval, firmly fixed mass lying rather high in the pelvis was found. The vagina ended blindly. No uterus or cervix could be outlined. The secondary sex characteristics were essentially normal. At operation the ovaries, tubes and uterus were absent with a nice scar running along the base of the bladder. A large retro-peritoneal mass was found just below the bifurcation of the aorta. The retro-peritoneum was incised and a huge wad of fat exposed. Buried in this fat was an ectopic kidney, taking its blood supply from well up on the left side of the aorta. No kidney substance could be palpated in either of the normal positions and no ureter could be demonstrated on the right side.

In the report of Guizzetti and Pariset on 20,000 autopsies, there was only one case in which a solitary ectopic kidney was found. It is unfortunate that in the course of this operation the blood supply to the kidney was hopelessly damaged. The patient, of course, died from Uraemia. An autopsy was refused.

While we have not the data of the first operation, and it is unfortunately unobtainable, the fact that both ovaries and the uterus were removed in a 19 yr. old girl, whose menstruation had been extremely scanty and irregular, and whose story, as obtainable later, was not at all suggestive of any pelvic infection, leads us strongly to the supposition that she must have had a gross congenital abnormality of the organs removed. This is confirmed by inference by the finding of the solitary ectopic kidney.

This patient, therefore, represents the extreme grade in the failure of the uro-genital system to develop. A failure of both metanephros, complete in the right side, partial on the left, and of both Mullerian ducts, to develop normally. The partial development of the left metanephron was the only thing that made life possible.

In conclusion, we wish to again point out

that a bicornuate uterus, or a unicornuate uterus, means a failure of one or both Mullerian ducts to develop properly. It should automatically suggest to our minds the possibility of a similar failure of the metanephron on the same side and the possibility of a renal abnormality that might easily lead to a surgical tragedy.

The four cases presented represent progressively more serious abnormalities. The first case simply represents the failure of the last step in the development of the Mullerian ducts; namely in complete fusion.

The second case shows a somewhat more serious failure on the part of both these ducts, in that development was stopped considerably short of its ultimate goal. Again, however, there was a perfect development into normal kidneys by the metanephros.

In the third instance the right side developed normally. On the left side, however, there was an extremely rudimentary development of the Mullerian ducts. So far as could be determined, the left metanephron never developed.

The fourth patient shows a partial failure of the left metanephron to develop normally and a complete failure of the right metanephron to develop. As we have pointed out, there are also strong grounds for supposing a fairly complete failure in the development of the Mullerian ducts.

#### DISCUSSION

Dr. M. Mosteller, 2713 Duncan St., Columbia:

Dr. Doughty's paper has given us some very valuable information along a line which we are prone to overlook. It has been so well presented that I hesitate to mention any of the points he has already mentioned, but I should like to emphasize his first point—that is, the common origin of the reproductive and the urinary systems. Most of us are in the habit of thinking of abnormalities of the reproductive system as being much more common than abnormalities of the kidney, but that is due to the fact that we find these abnormalities in the everyday examination of patients in our offices. If this is true, and we remember what Dr. Doughty has so forcibly brought to our minds, we shall be greatly benefited. If we take any good textbook and turn to abnormalities of the kidneys, we shall find something like this: "Single kidney occurs about one time in every two thousand four hundred autopsies, and in fifty

per cent these changes will be associated with some other changes of the genitalia." Now, all of us know perfectly well that abnormalities of the kidneys are frequently associated with some pathological condition. It was my good fortune to be associated with Dr. Doughty in three of the cases which he has just presented. I may add that, due to the rapid strides being made in the conjoint work of the radiologist and the urologist and the technical improvements being made in the work of the radiologist and gynecologist, I think Dr. Doughty's paper is a timely one, instead of being one dealing with rare phenomena.

Dr. James R. Young, Anderson:

This has been a very interesting paper to me. One thought occurred to me as the doctor read it. I have had two or three such cases. Less than a year ago an obstetrician reported to me that a girl on whom I had operated had been delivered by her the night before. That was a case of double uterus. The uterus on the left side had torsion of the ovary. The left uterus and adnexa were removed. Later that girl married and had a baby. The thing I rise to suggest is that in the treating of these conditions we be as conservative as we can.

Dr. W. R. Barron, Columbia:

There is one point that I think would be of interest to every practitioner of medicine. Dr. Doughty emphasized the fact that these anomalies occur simultaneously. When we meet with these anomalies of the genital tract, we should like to have an examination of the urinary tract.

I have not been so keen about Uroselectan. It may interest you to know that in Neo-Iopex there is practically no reaction. It is very easy to give, and it is put up in sterile form, ready to administer. I have used some of it and like it better than Uroselectan. It simplifies the bringing out of the urological side of this question, which Dr. Doughty has emphasized in the diagnosis.

(Note: Since this discussion I have had a case of congenital absence of the right kidney in a woman who had a bicornuate uterus, discovered at operation for uterine trouble.)

Dr. Marion H. Wyman, Columbia:

Two fundamental things are wrong in our diagnosis. One is the money of the patient; another is that too many x-ray exposures have been given, and the tolerance of the skin used up, in trying to find out what is the matter with the patient. Too often the urologist is limited as to the number of x-rays he can make because of the number that have already been made. We claim that we can diagnose any case if the urologist is not limited by the patient's lack of money or by the number of x-rays already made on him.

Skiodan and these other things have their place, but I believe injected media are better.

We claim we can diagnose any of these cases if we are not handicapped in the ways I have named.

Dr. Doughty, closing the discussion:

Dr. Wyman, I believe, saw one of these cases and cystoscoped it three or four times.

This is Dr. Mosteller's paper, as much as mine. So far as I know, it is the first time that a solitary kidney has been diagnosed by Uroselectan alone. A great deal of credit is due Dr. Mosteller, because he made the diagnosis.

In three cases a double uterus was demonstrated. Two were operated upon, one for the reason Dr. Young indicated.

The frequency with which genital abnormalities are present is not indicated in the textbooks. In other words, faced with a bicornuate uterus, what are the chances of finding a renal abnormality? The literature does not cover that at all. I believe it is important to keep this relationship in mind. The burden of my song in this paper is that we determine beforehand, and therefore with safety to the patient, what the status of the kidney is, either by the use of Skiodan or by some other means, it does not matter what, just so you do determine the status of the kidney before you operate.

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"HAY-FEVER" PLANTS OF CHARLESTON, S. C. AND VICINITY

J. H. Hoch, M.Sc. and J. I. Waring, M. D.,  
Charleston, S. C.

The relation of certain plants to definite cases of hay-fever is well known, and a comparatively small number appear to be responsible for the great majority of cases of clinical, seasonal hay-fever or asthma. However, any plant which produces a relatively large amount of pollen, especially if it be wind-pollinated, is a potential provoker of symptoms, and the local abundance and the amount of exposure determine its importance to an allergic individual.

Data referring specifically to the local flora in relation to hayfever is not available, and for this reason a survey of the wind-pollinated plants in the vicinity of Charleston (roughly within a ten-mile radius) has been undertaken. Not every plant listed has been shown to be causative of hay-fever, either here or elsewhere, but all come within the range of possibilities. The more abundant plants have been marked with an asterisk. The list does not attempt to

include all of the less common wind-pollinated plants of the vicinity.

#### TREES AND SHRUBS

- \**Pinus* species—Pines.
- Strobos Strobos* (L.) Small—White Pine.
- Taxodium distichum* (L.) L. C. Rich—Swamp Cypress.
- Sabina* species—Savin, Red Cedar.
- Thuja occidentalis* L.—White Cedar.
- Juglans nigra* L.—Black Walnut.
- Hicoria* species—Hickory.
- \**Morella* species—Bayberry, Wax-myrtle.
- Populus* species—Poplar, Cottonwood.
- Salix* species—Willow.
- Carpinus Caroliniana* Walt.—Hornbeam.
- Betula nigra* L.—Birch.
- Castanea pumila* (L.) Mill.—Chinquapin.
- Fagus Americana* Sweet—Beech.
- \**Quercus* species—Oaks.
- Morus* species—Mulberry.
- Broussonetia papyrifera* (L.) Vent.—Paper Mulberry.
- Ficus Carica* L.—Fig.
- Celtis* species—Hackberry.
- \**Ulmis* species—Elms.
- Liquidambar Styraciflua* L.—Sweet or Red Gum.
- Plantanus occidentalis* L.—Sycamore.
- Robinia Pseudacacia* L.—Locust.
- Ailanthus glandulosus* Desf.—Tree-of-Heaven.
- Schmaltzia copallina* (L.) Small—Smooth Sumac.
- Euonymus Americana* L.—Strawberry Bush.
- Aesculus* species—Horse-chestnut, Buckeye.
- \**Acer* species—Maples.
- Rulac Negundo (L.) A. S. Hitchcock—Boxelder.
- Tilia pubescens* Ait.—Downy Basswood.
- Chionathus Virginicus* L.—Fringe Tree.
- Fraxinus Americana* L.—White Ash.
- \**Iva frutescens* L.—Marsh Elder.
- \**Baccharis halimifolia* L.—Sea-myrtle, Groundsel Tree.

#### GRASSES, RUSHES, ETC.

- Typha* species—Cat-tail.
- \**Andropogon* species—Beard-grass, Broom-grass.
- Erianthus alopecuroides* (L.) Ell.—Plume Grass.
- \**Sorghum Halepense* (L.) Pers.—Johnson Grass.
- \**Paspalum* species—Paspalum.
- \**Syntherisma* species—Crab-grass.
- \**Panicum* species—Panic-grass.
- Chaetochloa* species—Foxtail Grass.
- \**Cenchrus* species—Bur-grass.
- \**Stenotaphrum secundatum* (Walt.) Kunze—Charleston Grass.

- Anthoxanthum odoratum* L.—Sweet Vernal-grass.
- Alopecurus geniculatus* L.—Water Foxtail.
- Agrostis* species—Red-top.
- Polypogon Monspeliensis* (L.) Desf.—French Beard-grass.
- Sporobolus* species—Rush-grass.
- \**Capriola Dactylon* (L.) Kuntze—Bermuda Grass.
- \**Eleusine Indica* (L.) Gaert.—Goose or Wire Grass.
- \**Spartina* species—Marsh Grass.
- Bromus unioloides* (Willd.) H. B. K.—Southern Chess.
- Distichlis spicata* (L.) Greene—Saltgrass.
- Eatonia obtusata* (Michx.) Gray—Early Bunch-grass.
- Eragrostis hirsuta* (Michx.) Nash—Stout Love-grass.
- Festuca* species—Fescue Grass.
- \**Poa* species—June Grass, Blue Grass.
- Uniola paniculata* L.—Sea Oats.
- Hordeum* species—Barley.
- Lolium* species—Rye-grass.
- Elymus glabriflorus* (Vasey) Scribn. & Ball—Smooth Southern Wild Rye.
- \**Zea Mays* L.—Corn.
- Cyperus* species—Nut-grass.
- Eleocharis* species—Spike-rush.
- Fimbristylis laxa* Vahl.—Club Rush.
- Fuirena squarrosa* Michx.—Fuirena.
- Rynchospora Grayi* Kunth.—Beaked Rush.
- Scirpus* species—Bulrush.
- Scleria ciliata* Michx.—Hairy Nut-rush.
- Juncus* species—Rushes.
- Dendropogon usneoides* (L.) Raf.—Spanish Moss.

#### WEEDS

- Persicaria* species—Smart Weed, Lady's Thumb.
- Polygonum* species—Knotweed.
- Rumex* species—Dock.
- Atriplex* species—Orache, Salt-bush.
- \**Chenopodium* species—Goosefoot, Jerusalem Oak, Wormseed.
- Salsola Kali* L.—Salt wort.
- Salicornia ambigua* Michx.—Woody Glasswort.
- Dondia linearis* (Ell.) Millsp.—Tall Seablite.
- Alternanthera* species—
- \**Amaranthus* species—Pigweed, Amaranth.
- Plantago* species—Plantain.
- Sambucus Canadensis* L.—Common Elder.
- \**Ambrosia* species—Ragweed.
- \**Xanthium glabratum* (DC.) Britton—Bur-weed Cocklebur.
- \**Eupatorium capillifolium* (Lam.) Small—Dog-fennel.
- Erigeron* species—Fleabane.

*Leptilon linifolium* (Willd.) B. S. P.—  
Horseweed.

\**Solidago* species—Goldenrod.

The abundance of pollen in a particular locality may be determined roughly by exposing vaseline-coated slides and making a microscopic examination. An exact recognition of pollens is often difficult and the resemblances of some types is so marked that absolute identification may be impossible. However, the following key, altho it has many recognized shortcomings, may be used as a helpful guide in determining the prevalence, at any particular time, of the more common pollens of this section.

I. Pollen grains smooth, without spicules or spines.

A. Elliptical or oval

1. With 3 longitudinal furrows, ends truncated—*QUERCUS* 16-40 microns.

B. Spherical

1. With regular concavities, resembling round-mesh golf balls  
*AMARANTHUS* 19-30 microns  
*CHENOPODIUM* 19-35 microns

C. Irregularly spherical, oval, pyramidal, or polyhedral

1. With single germinal pore evident when moist	
CAPRIOLA	20-38 microns
POA	21-37 microns
SYNTHERISMA	24-36 microns
PASPALUM	26-46 microns
PANICUM	26-47 microns
ANDROPOGON	33-40 microns
SORGHUM	33-48 microns
SPARTINA	36-44 microns

II. Pollen grains with distinct spicules or spines

A. Elliptical or oval

1. Distinctly spiculate but not spine—  
*BACCHARIS* 22-28 microns

B. Spherical

1. Distinctly spiculate—  
*AMBROSIA* 15-25 microns  
*SOLIDAGO* 17-31 microns  
*IVA* 15-25 microns

2. Very finely spiculate, apparently only coarsely granular  
*EUPATORIUM* 13-19 microns  
*XANTHIUM* 30-36 microns

III. Pollen grains smooth, with 2 lateral wings—*PINUS* 40 microns (average).

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## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

MARCH, 1933

No. 5

The value of procedures for putting the lung at rest in the treatment of tuberculosis is established. The several methods used are pneumothorax, interruption of the innervation of the diaphragm or the muscles of respiration, removal of portions of the ribs, the insertion of foreign substances or structures between the ribs and pleura, and intrapleural pneumolysis. Recently, a new measure, scaleniotomy, has been suggested for obtaining surgical rest of the lung. Abstracts of two articles on this subject follow.

### SCALENIOTOMY—A PRELIMINARY REPORT

Scaleniotomy is the division of the fibres of the scaleni muscles for the purpose of decreasing the motility of the upper chest. This procedure was advocated by Kochs, Els and Junkersdorf in October, 1930, and independently by Gale and Middleton in July, 1931. After their preliminary work the authors felt that they had established apical rest satisfactorily and that the procedure may be a valuable aid, either in conjunction with phrenic exairesis, or when phrenic exairesis has failed and some measure of a relatively conservative type is to be attempted before the patient is subjected to a more radical operation.

#### MECHANISM OF SCALENIOTOMY

The scaleni are three muscles (sometimes four) of the deep cervical group. They arise from the transverse processes of the third, fourth, fifth, sixth and seventh cervical vertebrae, and are inserted by tendinous bands into the first and second ribs. The scaleni provide anchorage for the first three ribs so that the intercostal group may function on them. Paralysis of the scaleni results in a caudad (toward the posterior) movement of the upper three ribs and exaggerated outward movement of the costal margins on inspiration. This tends to immobilize the pulmonary apices.

Under local anaesthesia the scaleni are carefully dissected out and divided as near their in-

sertions as possible. Injury to the subclavian artery and the lower cervical nerves must be avoided. (The surgical technic is clearly described by the author.) When the wound is closed there is a cavity about the size of a pigeon's egg, the severed edges of the muscle having retracted usually 1.5 inches. No bridging with muscle fibres was observed as late as six months after operation.

"The results obtained from phrenic exairesis depend upon the changes in the relationship of one part of the diseased lung to another; and the relaxation and rest. The amount of improvement is not dependent entirely upon the height to which the paralyzed diaphragm rises in the thorax, although in the main this is so. Some improvement may usually be expected from phrenic exairesis in lesions throughout the lung, especially in the lower three-fourths. In the more remote apical lesions, not so much improvement may be hoped for, and it is in these cases that scaleniotomy may be expected to change the anatomy, and the relationship of diseased parts to each other, and rest the area involved.

"In all our cases, as in the cases reported by Gale and Middleton, a marked reduction in the respiratory excursion of the upper part of the chest was noted, due to decreased intercostal movement; and, when the combined operation was done, there was no increased upper intercostal movement, so often seen when the phrenic nerve alone is blocked or evulsed.

"When scaleniotomy is combined with phrenic exairesis, upper as well as lower lung lesions may be expected to improve.

"When scaleniotomy alone was done; very little reaction occurred; three of the cases ran fever for one week, and in two the pulse-rate was increased for two weeks. No complication has occurred, nor has any deformity resulted. The results in these cases are based on their clinical records and clinical progress."

The results in a series of 52 cases were as follows:

Of 20 cases in which a phrenic exairesis had been done previously, and in which improvement had stopped, ten were improved and ten not improved.

Of 29 cases in which scalenectomy was com-

bined with phrenic exairesis, 19 improved and ten did not improve.

Of 3 cases in which scalenectomy only was done, two improved definitely.

*Scalenectomy in the Treatment of Tuberculosis, Meade Clyne, Am. Rev. of Tuberc., Dec., 1932.*

### SCALENIOTOMY AS AN ADJUNCT TO COLLAPSE THERAPY

Fisher discusses the merits of the various methods of collapse therapy and comments on the results of 31 scalenectomies done at Waverly Hills Sanatorium. Eighteen of these had had phrenic exairesis from six months to three years previously without obtaining satisfactory contraction of the lesion. The remaining 13 patients were subjected to combined phrenicectomy and scalenectomy. In every case the inspiratory elevation of the ribs in the upper portion of the hemithorax has been markedly reduced or eliminated as noted on inspection and fluoroscopic examination. By actual measurements in comparable X-ray films, the caudad drooping on inspiration showed as much as a 2-cm. narrowing in the upper hemithorax. "A downward pull on that side, accompanied by a sense of weight over the upper half of the chest, was voluntarily noted by practically every patient in the series. Cough and expectoration tended to show a moderate increase the first day or two, later subsiding or disappearing altogether. Likewise, moderate dyspnoea was temporarily noticed by a number of patients, as indicative of a transitory reduction of vital capacity. In the patients who had had a prior phrenicectomy these symptomatic effects could definitely be attributed to scalenectomy alone."

Other favorable results noted include release of tension on cavity walls, the ability to sleep without being awakened by a strangling cough, ability to control cough, no recurrence of haemoptysis in two patients in whom it had been frequent before, normal temperature in one patient with fever of long duration. Reduction with clearing throughout the lesion was noted in several.



A 6-cm Present for Three Years.  
Marked Clearing and Contraction in 4 Weeks; Phrenicectomy 2  
Years Ago Resulted in No Improvement.

### SUMMARY

The author summarizes as follows:

"Scalenectomy affords a definite adjunct to collapse therapy and deserves consideration, along with phrenicectomy, in a certain proportion of cases.

"The effect is probably more nearly that of relaxation rather than of true compression, although a negative sort of compression is obtained by eliminating the upward, inspiratory pull exerted by the first and second ribs upon the apex of an adherent lung. Slight narrowing of the upper hemithorax has been shown.

"Striking improvement may be produced by scalenectomy in a relatively short time, although progressive gains may reasonably be expected to continue over an extended period.

"In a series of 31 cases, some persistent cavities having lung tissue around them have been closed or markedly reduced in size within a very few weeks. Others which were subpleural have been definitely flattened by costal drooping.

"Sympathetic improvement begins immediately in most cases. Relief from cough and decreased expectoration have been consistent effects. Prevention of recurrent haemoptysis

and rapid reduction of temperature to normal have been noted."

*Scalenotomy as an Adjunct to Collapse Therapy, Lincoln Fisher, Am. Rev. of Tuberc., Dec., 1932.*

## SOUTH CAROLINIANS

J. I. Waring, M.D., Charleston, S. C.

Oysters and Anemia—Coulson, E. J., Levine, H., and Remington, R. E.—Charleston. Am. J. Publ. H. 22 Nov. 1932—1141.

"The oyster is equalled or excelled only by liver in the amounts of iron and copper which it may furnish to the diet in an average serving . . . Oysters should, therefore, be efficacious in the treatment or prevention of those types of secondary anemia which respond to treatment with iron or iron plus copper . . . In order to insure an adequate supply of the inorganic constituents for hemoglobin production it would seem a wise plan also to include oysters in the diet of the pernicious anemia patient in conjunction with liver extract, since it is known that liver extract is relatively low in iron. An average serving of oysters (110 gm.) would furnish about 2 per cent of the human calorie requirement, and yield about 41 per cent of the daily dietary standard for iron."

Paroxysmal Hemoglobinuria—F. P. McCarthy and Robert Wilson, Jr.—Charleston. New Eng. J. of Med. 207 Dec. 8, 1932—1019.

A review of the subject, with discussion of the serologic test and the artificial production of an attack, and a report of two instances of the disease in syphilitic patients.

The Individual in Medical Teaching—K. M. Lynch—Charleston. Sou. M. J. 25 Dec. 1932—1240.

"Perhaps we have paid a disproportionate attention to methods as against men, to plants instead of people, to the endowment of bricks rather than brains" says the author. The teacher should be master of his subject, yet not

expectant that his students reach his level. He should be willing to admit ignorance of the unknown. He should have enthusiasm, sympathy, understanding, patience, and humor, qualities of "manhood" which he may transfer to his pupils along with their more limited, strictly medical education.

The Present Status of Prostatic Resection—T. M. Davis—Greenville. J. A. M. A. 99 Dec. 3, 1928—p. 1928.

A thorough discussion of this subject, with special reference to the author's methods and apparatus. The mortality rate in a large series was less than 1 per cent and complications were very infrequent.

In the same issue of the Journal of the A. M. A. in which the above article appears, an editorial on "Insensible Perspiration and Sweat" makes the remark "That there is a constant similar loss of material through the skin without the visible collection of water on its surface was made clear long ago by Sanctorius, who in 1614 published the results of extensive experiments on the 'insensible perspiration.' It is of interest, in this connection, that Dr. John Linning, a versatile and careful experimenter, made further observations of this constant loss of body weight during his thirty years' practice of medicine in Charleston, S. C., before the Revolution."

The Blood Dyscrasias Following the Arsphenamines—F. P. McCarthy and Robert Wilson, Jr. (Boston and Charleston). J. A. M. A. 99 Nov. 5, 1932—1557.

A review and discussion, with report of two cases, of hemorrhagic purpura and other difficulties developing after the use of the intravenous arsenicals. Classification is not very distinct, but two definite pathological changes are seen, one a depression of bone-marrow function, the other a toxic action on the blood platelets in the peripheral circulation. Prognosis in the aplastic group is poor; in the others it varies with degree of damage. Recovery seems to be independent of therapy, except that transfusion is very valuable for its temporary sustaining effect.

Protective Covering for Tube Bowl—R. B. Taft—Charleston. Am. J. Roent. & Rad. Ther. 28 Oct. 1932.

Description of a simple device of lead rubber and plywood for preventing stray radiation from the top of the X-Ray tube bowl.

Dissolution of a Safety-Pin in the Digestive Tract—E. W. Carpenter—Greenville. Sou. M. & Surg. 94 Dec. 1932—784.

In 3 1-2 months a safety-pin was almost completely dissolved by a child 16 months old. Numerous coincident and subsequent developments made the whole course of the case unusual.

## WOMAN'S AUXILIARY South Carolina Medical Association

### **WOMAN'S AUXILIARY SOUTH CAROLINA MEDICAL ASSOCIATION OFFICERS**

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District 7. Mrs. Dreyfus O. Winter	Sumter, S. C.
District 8. Mrs. Vance W. Brabham	Orangeburg, S. C.

The Woman's Auxiliary to the Spartanburg Medical Society extends a cordial invitation to the wives of physicians of South Carolina to attend the meeting in Spartanburg in April. Every effort is being made to arrange an instructively enjoyable program and highly pleasing entertainment. A hearty welcome awaits you in Spartanburg.

The Auxiliary to the South Carolina Medical Association will meet at the Church of the Advent, where luncheon will be served after the meeting.

The first meeting of the Auxiliary, the House of Delegates, will be held at nine o'clock Wednesday morning, April nineteenth. The House of Delegates is composed of the present officers, the past presidents and three delegates, or alternates, from each Auxiliary. This assemblage will elect the new officers and conduct all business.

There will be a short intermission after the meeting of the House of Delegates before the regular session convenes.

The Auxiliary to the Spartanburg County Medical Society, looking to the success of the Convention at Spartanburg selected the following chairmen:

Convention—Mrs. O. C. Bennett.

Registration—Mrs. P. M. Temple.

Luncheon—Mrs. C. N. Bailey and Mrs. R. D. Hill.

Committee on Music—Mrs. Jesse O. Willson, Chairman; Mrs. George Thompson, Mrs. H. E. Mason.

Pages—Misses Nettie Smith, Edith Wilson, Elizabeth Coan, Mary Hipp Wilson and Kathleen Carter.

Every arrangement is as ready as is possible at this date. The luncheon at the Church of the Advent, the ride through the beautiful city of Spartanburg, the tea in the lovely garden of Mrs. L. J. Blake, and each committee is awaiting the opportunity to lend its assistance to make the Convention at Spartanburg a never to be forgotten event.

Let our slogan be "See you in Spartanburg in April."

The Student Loan Fund is of great interest to every Auxiliary member. In the light of the readjustment of financial conditions, Mrs. Boyd's sensible arrangement of the Student Loan Fund payment will appeal to you.

My dear Madame President,

When I tell you that illness and sorrow have kept me inactive these many months, I'm sure that you will excuse my past neglect of the Loan Fund and help me, in the next two months, to bring its affairs successfully up to date.

Last year I urged every Auxiliary to adopt the recommendation of the Executive Board that each Auxiliary be responsible for two dollars per member, yearly, for the Student Loan Fund, and I confidently hoped that last year's efforts would end in unanimous success. The final result showed that many Auxiliaries failed to reach the goal, and I feel now that we were more ambitious for the Fund than financial conditions at that time warranted.

On my own responsibility, I have decided to make that "two dollar per member" quota cover the amount due in two years instead of in one

year. Under this plan those who raised only a portion of their quota last year, have two more months in which to make up their deficit. Those who raised their full quota last year will be paid up for this year as well. This plan applies only to these two years—last year and the present one—and is made to bridge our present difficulties, and to bring each Auxiliary to a position of proportionate responsibility in the work. Decisions as to future years can be made at the State meeting.

Send all funds to Mrs. J. W. Bell, Walhalla, S. C., Treasurer of the Loan Fund and please make every endeavor to have your auxiliary's full quota of two dollars per member in Mrs. Bell's hands before April 15th, in good time to make certain a report at the State Convention of "Paid in full" for every Auxiliary.

I should greatly appreciate a letter, at your earliest opportunity, promising your earnest co-operation and giving any news of your work for The Student Loan Fund.

With very best wishes, I am,

Mary K. Boyd,  
Chairman Student Loan Fund.

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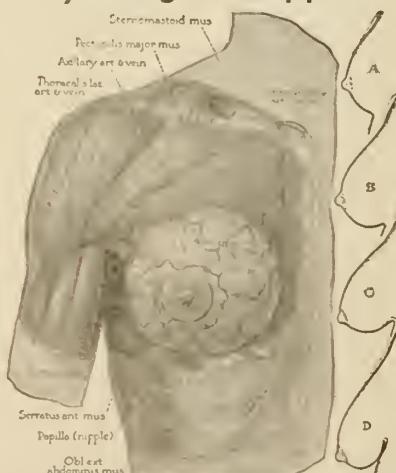


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## SOCIETY REPORTS

### PROCEEDINGS OF THE ANNUAL MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, WHICH WAS HELD AT ROPER HOSPITAL TUESDAY EVENING, DECEMBER 13th, 1932, at 8:30 O'CLOCK

The meeting was called to order by the Vice President, Dr. O. B. Chamberlain, in the absence of the President.

Present: Doctors: B. R. Baker; Ball; Banov; Beach; Beckman; Boette; Bowers; A. J. Buist, Jr.; Burn; Cain; Cannon; Chamberlain; de Saussure; Finger; W. H. Frampton; Heidt; Hope; Jenkins; F. B. Johnson; Lynch; McCrady; McInnes; Mazyck; Mitchell; Mood; Moore; O'Driscoll; F. L. Parker; Pearlstine; Peoples; F. R. Price; W. J. Ravenel; W. M. Rhett; Richards; Rudisill; Rutledge; Sams; Sanders; Scharlock; Scott; W. A. Smith; W. H. Speissegger; Sughrue; Taft; E. W. Townsend; J. F. Townsend; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr.; R. Wilson; Muller. (52).

The minutes of the regular meeting of November 22nd and of the special meeting of November 25th were read and confirmed.

Under Reports of Officers and Committees the Secretary reported that he had been directed by the Program Committee to report that at a recent meeting they had decided that on account of the lack of funds in the treasury no banquet would be held this year, and they had arranged for the usual scientific meeting. It was moved, seconded and carried that the action of this committee be approved.

The Secretary read the following letter from the Committee on the Costs of Medical Care:

November 19, 1932.

Dr. W. A. Smith, Secretary  
Charleston County Medical Society  
Charleston, South Carolina.  
My dear Doctor Smith:

On November 29th the Committee on the Costs of Medical Care will make public its Final Report of Recommendations. They will of course have far-reaching significance to the health and welfare of the people of the United States.

The Committee will go out of existence at the end of the present year. Action on its recommendations will then be in the hands of community leaders throughout the country.

Between November 29th and December 15th (when there will be wide-spread discussion of the recommendations in the public press) we expect that there will be hundreds of conferences of community leaders all over the United States to

discuss the recommendations of the Committee. Should there not be a conference of your community leaders to consider the recommendations as they apply to Charleston and the surrounding country?

A letter similar to this is being sent to your local health officer, the superintendents of many local hospitals (by the American Hospital Association), to the officers of one or more of your local service clubs (by their national organizations), and possibly to the secretary of your local dental society.

We believe the members of the medical profession should take the initiative in calling these conferences and suggest that you get in touch with one or more of these other leaders immediately for the purpose of calling a conference as soon as the Report is issued.

The Committee is now ready to provide suggestions regarding the setting up of these conferences. It will furnish without cost one copy of the Committee's Final Report of Recommendations to each community, as long as the supply lasts. Harry H. Moore, Director of Study, is the man for you to write to.

Sincerely,

William Darrach, M.D.,  
Stewart R. Roberts, M.D.  
Walter R. Steiner, M.D.

It was moved, seconded and carried that action on this letter be deferred until after hearing the paper of Dr. Robert Wilson, scheduled as a part of the Scientific Program.

Under Miscellaneous Business, the election of officers was taken up. The following, who were nominated at the previous regular meeting, were elected:

For Secretary—Dr. W. A. Smith.  
For Treasurer—Dr. J. H. Cannon.  
For Librarian—Dr. W. C. O'Driscoll.  
For Commissioner of Roper Hospital—Dr. J. J. LaRoche.

For Member of Board of Censors—Dr. M. W. Beach.

For Delegate to State Association—Dr. O. B. Chamberlain.

For Alternates to State Association—Dr. J. W. Burn, Dr. J. E. Smith, Dr. T. H. Martin, Dr. W. H. Prioleau and Dr. R. L. McCrady.

For Honorary Fellow—Dr. C. A. Speissegger and Dr. M. K. Mazyck.

The Secretary stated that he had just received a telegram from the President, who was in attendance at the meeting of the Southern Surgical Association at Miami, Florida. He then read

the following: Greetings to the Society at its Annual Meeting. We are with you in spirit. Daniel L. Maguire.

The Scientific Meeting was called at 9:00 P. M.

Under Case Reports, Dr. J. F. Townsend reported a case of oculo-gyric crisis and presented the case before the Society. This was discussed by Drs. Chamberlain and Cannon, Dr. Townsend closing.

Dr. R. B. Taft exhibited and discussed two cases of carcinoma which had been successfully treated, one with radium and one with x-ray. These cases were discussed by Drs. Lynch and Cannon, Dr. Taft closing.

Dr. R. L. McCrady reported a case of mesenteric cyst, complicating tyosalpinx, treated by suturing the cyst at the abdominal wall.

Dr. Robert Wilson, essayist of the evening, presented for discussion the report of the Committee on the Costs of Medical Care, of which he was a member. Dr. Wilson reviewed the origin of the Committee, stating that it was a voluntary committee headed by Dr. Ray Lyman Wilbur, Secretary of the Interior; that there was an advisory committee, made up of forty-eight members, representing various groups, including physicians, economists, sociologists, the general public and many others; that there was an administrative staff and a research staff; that there were twenty-seven special studies made bearing on the subject; that at the conclusion of the five years period of study majority and minority reports had been made, which had been submitted to the profession and to the press. He discussed the main points in both of these reports, stating that he approved the minority report and had voted for it. He gave as his opinion that the facts assembled by the Committee were quite worth while and he thought it would be helpful in working out a program in the future, which might be of benefit to the medical profession and to the public. He stated that there are many problems yet to be solved. This was discussed by Dr. Edward Rutledge.

At the close of this discussion, the Chair stated that the Society would now revert to Reports of Officers and Committees with the view of determining what should be done about the letter from the Committee on the Costs of Medical Care. The Secretary moved that the committee appointed at the meeting of October 25th for the purpose of investigating health and sickness insurance be renamed "The Committee on the Costs of Medical Care," and that all matters referring to this subject, including that of health insurance, be referred to them for investigation and report; and that the recent letter on the costs of medical care be referred for this purpose. This was seconded and carried.

There being no further business, the meeting adjourned. W. Atmar Smith, Secretary.

## REPRINTS!

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# The Journal of the South Carolina Medical Association

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NO. 4

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## SPARTANBURG NUMBER DEDICATED TO THE GENERAL PRACTITIONER

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## — CHILDREN — GAINED 4.84 times as fast on MEAD'S CEREAL

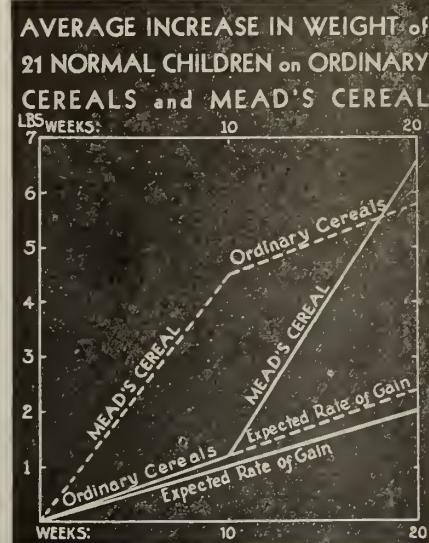
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SIMPLY by the addition of 4 ounces of Mead's Cereal to their daily diet, a group of 10 children studied by Summerfeldt<sup>1</sup> gained at 4.84 times the rate of a control group fed on ordinary cereal. Yet when the first group were fed ordinary cereals they gained at only 1.17 times the expected rate.

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<sup>1</sup>Summerfeldt, P.: *Am. J. Dis. Child.* 43:285-290; Feb. 1932.



The striking feature was that the rate of gain of the two groups of children increased or dropped in ratio to the amount of Mead's Cereal in their diet.<sup>1</sup>

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# The Journal

## OF THE

# South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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### EDITORIAL

#### MESSAGE FROM THE PRESIDENT

"I shall restore unto you the years the locusts have eaten." This picturesque but heartening prophecy spoken by the prophet Joel in the long ago, carries a very pertinent message for these years of depression. None will deny that the locusts have nibbled away industriously these latter days. Stocks, bonds, lands, bank deposits, and what not have been tempting morsels for this rapacious "brood of hell."

A group whose capital investment has been placed where thieves can not break through and steal has indeed been fortunate during these strenuous days. Doctors compose such a group. Their principal investment is their knowledge and experience. This the locusts may not devour. The members of our profession may have lost certain salted away dividends on their capital, but in the large view these losses are minor and our principal capital investment remains intact. What wiser course could the individual doctor follow during these lean years than to be continually adding to his

capital stock? The doctor who fails to take advantage of this patent fact is not wise. Perhaps no method has been found of converting knowledge and experience into clinical wisdom that is superior to the regular habit of active, intelligent participation in county medical society work. The doctor who redeems the time in this way, places himself in a position to have restored unto him the years that the locusts have eaten.

J. R. Young,  
President South  
Carolina Medical Association.

#### THE GENERAL PRACTITIONER

Great concern has been manifested of late over the future of the general practitioner, and both the majority and minority groups of the Committee on the Costs of Medical Care have expressed much anxiety over his waning influence; but they differ in their views of the methods to be followed for his rehabilitation.

Medicine is both science and art, knowledge

and skill, and in the practice of medicine equal emphasis should be laid upon both; shifting the emphasis too greatly either way will result in more or less serious loss. There is danger that organized medical practice may make the one mistake. As it is put in a recent editorial in the New York Times, "contrast human sympathy in sickness with the mechanical routine inseparable from rigid organization and economics and we grasp the implications of that art which we are in danger of losing." On the other hand the general practitioner too often makes the mistake of sacrificing science for art. The practice of medicine is an individual service and the general practitioner is capable of rendering it efficiently in the large majority of illnesses, but in order to do so he must qualify in the science as well as in the art.

A thorough knowledge of the fundamentals of medicine, a mind keenly watchful of the progress of medical science, the cultivation of skill in its application, and the constant cooperation with technicians and other practitioners more highly trained in special fields are essential qualifications. With these the general practitioner will be able to fill a social need and will compel recognition as an important factor in the distribution of medical care. Medical schools are coming to realize that their function is to produce general practitioners not specialists and are giving more attention to the fundamentals. This has always been the ideal of the medical school of our own state. With this better training will come a greater recognition of the dignity and worthiness of general practice and less tendency to rush prematurely into the field of specialism.

Robert Wilson,

Dean of the Medical College of the State of South Carolina.

---

#### IS THERE A PLACE FOR THE GENERAL PRACTITIONER?

This question is now being asked by a great many physicians who are doing general practice. In these days of rapid transportation and quick communication, the public and sometimes the doctors are, seemingly, rushing to the Specialist so much so that at times it appears that the Specialist is crowding out the family

doctor. I heard one general practitioner say, "That he did not like to send his patients to the Specialist, because when he did he usually lost the patient." Personally I cannot subscribe to this statement, though at times it appeared to me there was some truth in it.

The family doctor is an institution too old and too useful to ever be entirely done away with; there has always been a need and a place for him and there will always be one.

The practice of medicine in this or in any other country could not be properly taken care of without the general practitioner and he is, in a majority of cases, superior in his judgment and his resources to any of the Specialists. It is his business to meet all emergencies and the public should be educated only to visit a Specialist upon the advice of their family physician, and they may rest assured they will not needlessly be exposed to the trouble and expense of seeing a Specialist.

From all indications the medical profession and especially the general practitioner is up against a great fight. The trend of things seems to point strongly to State Medicine. They have had this in one form or another in other countries, notably England and Germany, but I do not believe it has worked satisfactorily to either the patient or the doctor. Even in our own country, what is in effect State Medicine is now being operated in California and recently I see that one of the hospitals in this State, which has been closed for quite awhile is to be reopened somewhat on the line or lines of State Medicine.

Our Medical Colleges are waking up to the fact that the country is badly in need of medical men who are qualified and willing to do general practice. These men accomplish more good in their community than any other class of medical men and a College could do no better work than to furnish them.

To me the out-look for the general practitioner is better and brighter than it has been for years and it is simply up to him to stand his ground and make good.

G. A. Neuffer, M.D.,

---

#### THE GENERAL PRACTITIONER

Like many that may read these words the writer, some thirty-five or forty years ago, had

the benefit of a "preceptor" and a chance to learn the "personal touch." He did not profit by it as he might have, but it helped.

The medical profession, particularly in the specialties, has drifted away from the human touch—the psychology of the situation—particularly because the trend is towards commercialism. A horrid fact, but still a fact.

A woman of notable intellectual capacity and cultivation recently told the writer that the method of a certain nationally known institution having pathological details worked out by subordinates, and their findings (as if they could be relied upon) formulated and accepted by their chiefs as the basis of diagnosis and therapy, was intellectually a joke and morally a tragedy. Professionally speaking such methods can only mean slow, but certain, suicide. This is the *raison d'être* of Christian Science, Osteopathy, Chiropractic, *et id omne genus*.

The sick man or woman demands personal attention and if the regular and legitimate profession does not and will not render it, then he or she is going to turn to somebody who does. This is one reason, and a potent one, why the modern trend to so-called "clinics" is doomed to fail. And this is why the recent report of The Committee on the Costs of Medical Care does and will lack the sympathy and endorsement of the large majority of high-toned and intelligent physicians of this country.

There should be scant sympathy for the man who practices any branch of medicine on a basis of laboratory diagnosis. When the experienced clinical observer and the laboratory technician lock horns, it is the part of wisdom to trust the former every time, and this is the psychology of the situation that is invariably sensed by the alert patient. Nor should this be taken as in any sense a depreciation of the value of the laboratory's services, but only as an echo of the beloved Osler's preachment concerning the importance of "Aequanimitas." Herein lie the "letters of marque," which are everlasting justification for the general practitioner of experience, observation and courage, who has been trained to use his five senses and his brains in the diagnosis and treatment of disease. Properly balanced and possessed of a full measure of the milk of human kindness, devoid of any spirit of commercialism, self-in-

dulgence and selfishness, he does and will always occupy an outstanding position from which he will not be supplanted.

Two things in connection with the psychology of medical practice should be learned and remembered by every man who would practice the noble art of medicine. The first is never to criticise the physician or surgeon who had previous charge of the case; and the second is never to give serious credence to what the patient says his former doctor said or did. Remembering and observing these two simple rules will serve to keep the professional foot out of much hot water, and it is to be hoped that every young man may learn these lessons early in his career. The intelligentsia, so-called, of today must be met, even professionally, on a different plane from that of the proletariat or hoy-polloy. The former expect to be told the why and wherefore of any procedure that is advised. They demand results—that is their right—and if they do not get them, they want to know why. That also is their right.

More and more the profession of medicine must realize that it is dealing with sophisticated people. General and widespread education is making the world wise; and it is well that this is so. Education is the "open sesame" to light that must and will inevitably outshine and destroy all of the pretentious and pretending cults that count their claims to virtue only upon the sentimental yearnings and credulity of mankind.

The proletariat can still be treated as a more or less servile and cringing people, who may be lorded over if one so chooses; but it will be well to remember that even as the paladin of today may be the pauper of tomorrow, the reverse is true also, and our public program of the education of the masses must and will put upon us a growing responsibility, as professional men, to take care of them as adequately and intelligently and sympathetically as they are sure to demand.

These forces and qualifications are embodied alone in the person and personality of the general practitioner, and while the intellectual man of this type will not spurn the help of the laboratory or the special knowledge of his confrere practicing a specialty, yet he, in the minds of his clientele, will always remain as repre-

senting the epitome of all that is good and devoted in his chosen work of ministering to the ailing minds and bodies of his beloved patients. He is immortal.

J. W. J.

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JOURNAL DEDICATED TO THE GENERAL PRACTITIONER

For the first time, so far as we know, a State Journal issue is being dedicated to the general practitioner. For the first time also, this special number of the Journal brings into action the full battery so to speak of its Associate Editors with the one aim that every editorial by them shall present to the general practitioners of South Carolina something worthwhile that they may utilize in their daily rounds of practice. Our able staff of Associate Editors deserve the highest commendation from the members of the South Carolina Medical Association. Special editorials by past Presidents of the South Carolina Medical Association appear also in this issue of the Journal. We are supported in our belief that a better day for the general practitioner is now on the way by many authorities. The March issue of the *Journal of Pediatrics*, Official Organ of the American Academy of Pediatrics, has this to say in its editorial column.

"The development of special fields of practice in medicine has been an important phase in the development of the medical sciences as a whole. Most young men, however, have been attracted to specialize in recent years by the promise of better economic conditions and returns. The result has been that the various specialities have become so overcrowded that today general practice probably offers a better opportunity from an economic standpoint. We feel that the present economic situation will probably do more to stop the urge to specialize than any other factor. While the gross returns to a specialist are greater than to the general practitioner, the expenses of practice are much greater and much more difficult to cut down when income falls, as it has in the past two years."

A SPECIAL FEATURE SPARTANBURG MEETING

The central theme of our program this year is a symposium on Traumatic Surgery. This has come about through a desire on the part of the Scientific Committee to contribute something worthwhile both to the scientific and economic aspects of accidents which are constantly increasing in our State. The economic phases have been in many cases burdensome to the general practitioner and to the hospitals and surgeons. It is hoped that out of our deliberations may come suggestions for legal enactments bearing on the solution of this extraordinary problem. The essayists on the symposium have been invited by the committee because of their experience, their skill, and their willingness to lend the weight of their knowledge to a solution of the difficulties confronting us. We give the names of these essayists here inasmuch as this feature will be the first order of business on the morning of April 19 at nine A. M. after the opening exercises are over. It is desired by the committee that this symposium shall be discussed very generously from the floor as its importance warrants therefore no provision has been made ahead of time to provide for certain individuals to open the discussion.

Symposium on Traumatic Surgery  
Statistical Report of Accidents in South Carolina

By Dr. Frank Wrenn, Anderson, S. C.  
The Treatment of Skull and Brain Injuries

By Dr. A. J. Buist, Charleston, S. C.

The Management of Roadside Injuries

By Dr. James McLeod, Florence, S. C.

The Treatment of Traumatic Tetanus. Report of Five Cases.

By Dr. C. O. Bates, Greenville, S. C.

GENERAL DISCUSSION

ESSAYISTS FROM SPECIAL SOCIETIES

For the first time in our State the Scientific Committee recognizes most of the special societies by an invitation to them to elect one of their number to present a paper before this meeting of the State Association with the general practitioner in mind. We present the

names of these essayists, the subjects they will discuss, and the special societies they will represent.

#### Essayists from Special Societies

Recent Advances in X-ray as an Aid in Diagnosis

By Dr. Floyd Rodgers, Columbia, S. C., representing the S. C. X-ray Society.

The Treatment of Diabetes

By Dr. F. E. Zemp, Columbia, S. C., representing the S. C. Society of Internists.

The Anemias

By Dr. J. Heyward Gibbes, S. C., Columbia, S. C., representing the S. C. Society of Internists.

The Treatment of Infectious Diseases in Children

By Dr. J. P. Price, Florence, S. C., representing the S. C. Pediatric Society.

The Treatment of Gonorrhea From the Standpoint of the General Practitioner

By Dr. James Whaley, Charleston, S. C., representing the S. C. Urological Society.

Strabismus. A Plea

By Dr. I. J. Mikell, Columbia, S. C., representing the S. C. Eye, Ear, Nose and Throat Society.

#### PUBLIC HEALTH MEETING

For many years the Association provided for joint meetings of the members of the Association and the public at which distinguished speakers brought to the attention of the public the latest views with reference to the prevention of disease. This was a part of a world wide campaign. Then the Association seemed to feel that the attendance on the part of the public in some of the places did not justify a continuation of this arrangement. Last year the time seemed ripe to resume the former plan by virtue of an increased interest in periodic health examinations, immunizing campaigns, etc. For the meeting this year we have secured two of the most famous medical men in America to address the public on Wednesday evening, April 19 at eight o'clock. The theme for these addresses will bring home to the public an intimate resume of the vast importance of the proper functions of the medical profession in modern times. The achievements in preventive medicine have been so rapid and so

spectacular that we have come to look upon them as common place. They have not been brought about by medical men alone but by the contributions of allied sciences to a considerable extent. Medical men, however, have been in the forefront along with other scientific men and women in applying the principles of modern science to the preservation of health and happiness.

#### THE WOMAN'S AUXILIARY

The program of The Woman's Auxiliary covers a wide range of important topics as usual. For the first time by virtue of an amendment to their Constitution they will have a House of Delegates. The Woman's Auxiliary adds tremendously to the entertainment features of the State Association. It is expected that the attendance will be large at Spartanburg.

#### OUR GUESTS

Every doctor in South Carolina, whether he is able to attend the meeting at Spartanburg or not, must be proud of the unusual privilege of having three of the most distinguished physicians in America to come to our State on invitation of President Young. Dr. Olin West, Secretary and General Manager of the American Medical Association Chicago, is at the head of the greatest medical organization in the world, now numbering about one hundred thousand. Dr. William David Haggard is President of one of the greatest surgical organizations in the world, the American College of Surgeons. Dr. Haggard is a past President of the American Medical Association, and everybody will want to hear him speak because he is known far and wide as the most brilliant and fascinating medical orator in the United States. Dr. Haggard is Professor of Surgery at Vanderbilt University, Nashville, Tennessee. Dr. Paul P. McCain is originally from the far famed educational center, Due West, S. C. but in later years has been at the head of the wonderful North Carolina Tuberculosis Sanatorium. He is an authority of unusual attainments in the field of tuberculosis.

## ENTERTAINMENTS

A sentiment has been expressed at different times to the effect that the entertainment features of the State Medical Association should be limited to one chief function, that is, the President's reception and dance on the night of April 19 at the Cleveland Hotel. This gives an opportunity for the visiting physicians and their families to meet the citizens of Spartanburg and at the same time to meet each other. The busy grind of the regular programs may thus be happily concluded on the first day of the annual scientific session to the delight of all concerned.

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## HOTELS

The Cleveland Hotel has been designated as Headquarters and place of meeting but there are at least two other splendid hotels recommended by the local committee, The Franklin and the Gresham. Spartanburg will be able to take care of everybody in a comfortable way but reservations should be secured early.

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## THE COMPLETED PROGRAMS

We have decided this year to let the detailed programs go forward in the mails, giving all the information about the House of Delegates, the individual papers on the scientific program, the election of officers, the selection of the place of meeting for the ensuing year, the reports of various committees, etc. This issue of the Journal, therefore, gives only the special features.

---

## LOCAL COMMITTEES OF THE SPARTANBURG COUNTY MEDICAL SOCIETY

General Chairman, Dr. D. L. Smith.  
Vice-Chairman, Dr. W. M. Sheridan.  
Commercial Exhibits, Dr. J. Moss Beeler.  
Finances, Dr. George E. Thompson.  
Scientific Exhibits, Dr. Cecil Rigby.  
Meeting Place, Dr. J. F. Busch.  
Entertainment, Drs. W. W. Boyd, H. E. Heinrich, Jr., W. B. Lyles, F. H. Sanders, and R. D. Hill.  
Public Meeting, Dr. O. C. Bennett.

Women Physicians, Dr. L. Rosa H. Gantt.  
Alumni Luncheon, Dr. C. W. Bailey.  
Golf, Dr. R. P. Finney and Dr. J. R. Sparkman (No Green fees).

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## THE SPARTANBURG PROGRAM APRIL 18, 19, 20 DEDICATED TO THE GENERAL PRACTITIONER

For the first time, a program has been planned wholly for the benefit of the general practitioner at the Eighty Fifth Annual meeting of the South Carolina Medical Association. The program has been carefully considered from every angle both scientific and economic by the President and all the other officers and committees of the State Association. For twelve months the deliberations have been in progress and numerous meetings of committees and officers have been held to the end that nothing should be left undone to make this one of the most elaborate programs in the interest of general practice held by any State Society. President Young has been a leader in this movement and he has had the loyal support of the entire official family.

---

## OFFICERS AND COMMITTEES OF THE WOMAN'S AUXILIARY TO THE SPARTANBURG COUNTY MEDICAL SOCIETY

PRESIDENT ----- *Mrs. O. C. Bennett*  
VICE PRESIDENT ----- *Mrs. Hugh S. Black*  
SECRETARY ----- *Mrs. R. D. Hill*

### PROGRAM COMMITTEE

*Mrs. O. B. Wilson  
Mrs. J. T. Carter  
Mrs. W. P. Coan*

### TEA COMMITTEE

*Mrs. Roy P. Finney  
Mrs. S. O. Black  
Mrs. J. E. Cudd*

### PUBLICITY AND TRANSPORTATION COMMITTEE

*Mrs. C. W. Bailey  
Mrs. P. M. Temples  
Mrs. F. H. Sanders*

**MUSIC COMMITTEE**

Mrs. J. O. Willson  
Mrs. Geo. Thompson  
Mrs. H. E. Mason

Mrs. P. M. Temples  
Mrs. D. L. Smith

The Auxiliary will meet at the Episcopal Church on Advent Street at ten o'clock, Wednesday morning, April 19.

**RECEPTION COMMITTEE**

Mrs. C. W. Bailey  
Mrs. R. D. Hill

Luncheon will be served at the same place at one o'clock in the afternoon of the same day.

**REGISTRATION COMMITTEE**

Mrs. Oscar Wilson

At five o'clock in the afternoon all will meet at the Cleveland Hotel to be given rides around the city, the rides ending at Mrs. L. J. Blake's, 189 1-2 E. Main Street, for garden tea.



Air View of Spartanburg

## *Spartanburg, The Convention City*

Spartanburg's medical, civic and business forces have united to entertain the physicians and surgeons of the state at the annual convention of the South Carolina Medical Association on April 18, 19 and 20. The facilities of three modern hotels and the Spartanburg Country Club will be at the disposal of the Association members.

Spartanburg is a city of the new South—the South which has lost none of its romance and charm and culture in the change from a section entirely devoted to agriculture to one in which industry is playing a great and increasingly important part.

The Spartanburg of today is a city of great industries and distributing houses, of railroads and automobiles and airplanes, but it is a city also of great colleges and schools and churches. It is a city of modern paved streets, but streets which are tree-shaded and inviting. It is a city of commerce, yet a city which appreciates the Central arts.

### HEALTH

Spartanburg, high and well-drained, is naturally a healthful city. But every care is taken to keep it so. Its water system is given a sufficiency rating of 100 per cent. by officials of the American Public Health Association. The General Hospital system, with its provisions for all types of cases, and the Mary Black Clinic, offer unusual hospital facilities. A new sewage disposal system has just been completed at a cost of \$1,000,000. A modern, well-organized, well-directed and well staffed public health department is in full operation.

### CLIMATE

Located in the Piedmont section of northwestern South Carolina, at an elevation of 875 feet above sea level and within sight of the lofty peaks of the Blue Ridge Mountains, Spartanburg enjoys a year round climate both mild and bracing, a climate which permits indulgence in outdoor sports like golf and tennis every month in the year, for the mean annual temperature is 62.6°, the average varying from 79.7° in July to 44.5° in January. The elevation and the background of towering mountains serve to temper the summer heat and to protect against the cold waves of winter.

Chartered in 1831, Spartanburg has enjoyed a steady growth until today more than 30,000 persons live within the circle of one and one-half miles radius which forms its boundary. Expansion of the city facilities has long ago passed this artificial line, however, and with it has gone increased suburban population. The city and the immediate suburbs have more than 40,000 inhabitants. Spartanburg is the county seat and supply center of Spartanburg County, and the city and county form a compact unit with a population of more than 116,000. Of these, 73.9 per cent. are native-born white.

### EDUCATIONAL FACILITIES

Spartanburg's educational system is a point of great pride to its citizens. More than seven thousand children attend its public schools, with their teaching and supervisory staff of more than two hundred trained educators. The school buildings are modern in construction and equipment, teaching standards are high, and courses of study in keeping with the best educational practice.

Converse College, one of the ranking women's colleges in the South, is located here. The able faculty and high standards of scholarship have won the recognition of all the educational rating agencies of the nation. Students from twenty states are represented in its enrollment. Wofford College, for men, which draws its support largely from the Methodist denomination, ranks with the best in the South. The prominence of its graduates in business, academic and professional life attests the thoroughness of the preparation it gives for life and the vitality of the Wofford spirit. These two colleges usually have a combined enrollment of 1,000. The Textile Industrial Institute, a junior college, is a most unique institution. Its students divide their time between work in the class-room and work in one or the other factories of the city, paying their way as they go. Naturally, the average age of its students is higher than in most colleges, but the importance of its work is indicated by the fact that its students are drawn from fifteen states and that the waiting list is twice the capacity of the school. A few miles from the city, at Cedar Spring, is the State School for the Deaf and Blind, one of the pioneer institutions of its kind.

The Kennedy Public Library is one of the oldest and largest in the State. Both Converse and Wofford have fine libraries, that at the former the gift of the late Andrew Carnegie.

Two daily newspapers, the Herald (morning) and the Journal (afternoon), with full Associated Press service, are published here.

Radio Station WSPA, "The Voice of South Carolina," is located at Spartanburg and broadcasts daily programs.

### RECREATION

Recreational opportunities are numerous and varied. Both the Spartanburg Country Club and the Shoresbrook Golf Club maintain excellent 18-hole golf courses. There are numerous tennis courts. Cleveland Park has a lake for boating, a swimming pool and a zoo. Duncan Park, a magnificent stretch of 142 acres, largely in a natural state, has the Municipal Stadium. The Y. W. C. A. has a large gymnasium and swimming pool. There are seven well-equipped playgrounds under the direction and supervision of a trained staff. There are several athletic fields.



Mill's Avenue, one of the Main Residential Streets of Spartanburg



Spartanburg High School



Administration Building and Chapel of Converse College

Rainbow Lake, fourteen miles from the city, is one of the most attractive recreation spots in the South. The lake, several acres in extent, is supplied with constantly changing filtered water from the city system. Every facility for comfort and convenience is provided, including dressing rooms, diving boards, water slides, pavillions with tables and benches for picnic parties, and night illumination. There are no charges except a nominal fee for locker service. Rainbow Lake, surrounded by three-clad hills and well-kept lawns, is both a beauty spot and recreation ground. Five thousand visitors have used its facilities in a single evening, attesting to its popularity. Short drives over well-paved roads make the famous mountain and lake resorts of Western North Carolina available to the Spartanburg citizen or visitor. The completion of South Carolina's magnificent highway system brings the seashore resorts of the eastern section of the State within five or six hours drive.

Three theatres bring to Spartanburg the best of the season's sound pictures.

There are several auditoriums available for convention purposes, including the ball rooms at the Cleveland and the Franklin, the Converse College auditorium, with a capacity of 2,600; the Carolina Theatre, seating 1,500, and the Spartanburg High School auditorium, which will accommodate 1200.

No other Southern city has better transportation facilities than does Spartanburg, while few have facilities equal to those found here. Spartanburg is served by the north-south main line of the Southern Railway, Washington to Atlanta; the east-west main line of the Clinchfield, Spartanburg to Cincinnati, the Charleston and Western Carolina, Spartanburg to Augusta and Charleston, and the Piedmont and Northern, Spartanburg to Greenwood. In all, seven lines of four railway systems radiate from the city to reach every part of the nation. Speedy freight and passenger service is available in all directions. The Hayne yards of the Southern are among the largest on the system. Spartanburg has twenty-eight passenger trains and forty-four passenger busses daily.

Spartanburg's transportation facilities and its geographical location are such as to make it the most efficient and economical distribution point for the Southeastern territory, with particularly important advantages in distributing to the Southern textile area. Generally speaking, the average mileage and the average freight rate from Spartanburg to all Southeastern points are lower than from any other city. This has led to the establishment of many of the city's factories and warehouses.

Spartanburg County leads the South in cloth production, as it leads South Carolina in value of manufactured products and of agricultural and livestock products. Manufactured products annually are valued at more than \$54,000,000, while crops and live-

stock bring each year \$10,000,000 or more to the farmers of the county.

While textiles constitute the principal industry, diversification is well under way, with 20 per cent. of the value of the county's manufactured products coming from industries other than textile. Wood preserving, foundry and machine shops, fertilizer, cotton seed products, printing, textile mill machinery and supplies, brooms, cigars, bakery products, mattresses and springs and a number of other products are represented. Distribution to the great markets more easily and economically served from Spartanburg is growing steadily. A number of nationally known concerns operate warehouses here, and the number is increasing rapidly as others learn of the advantages of this city as a distributing point.

Cotton is the principal crop, but corn, wheat, oats and other grains, forage crops, cantaloupes and watermelons, berries, apples and peaches, potatoes and other vegetables are grown in considerable quantities. Dairying is increasing, the county leading the entire State in number of milk cows. It is interesting to note that in contrast to the exodus from the farms of the nation as a whole, in Spartanburg both number of farms and farm population is increasing.

#### THE RETAIL MARKET

Spartanburg is the chief shopping point for a retail trade territory including four counties in South Carolina and three in North Carolina, with a total population of 325,000. The spendable money income of this market is approximately \$140,000,000 annually. It is a prosperous agricultural and industrial area.

Spartanburg is the heart of the famous South Carolina Piedmont, an area of twelve counties with a total population of 624,915. While this area has but 23 per cent. of the area of the State, it has more than 43 per cent. of the white population, produces 65 per cent. of the value of manufactured products and 90 per cent. of the value of textile products. Acreage values of crops and livestock products of this area are 33 per cent. higher than those of the remainder of the State. The population increase averages more than one per cent. per annum, and since 1900 the population has increased 43 per cent. This market takes from 45 to 66 per cent. of the South Carolina sales of a number of national distributors.

#### HIGHWAYS

Three important Federal highways, Nos. 29, 176 and 221, intersect here. These, with a number of State highways radiating from the city, connect Spartanburg over a system of paved highways with every part of the magnificent State highway systems of North and South Carolina, as well as with other States. All State and National highways leading into Spartanburg, as well as a number of county highways, are paved. The short routes from Asheville to Charleston and Savannah, from Atlanta to



A Business Street

New York, and from Miami to Quebec pass through this city.

The Spartanburg Memorial Airport provides every facility for safe flying, including night lighting, radio beacon, wireless, and weather reporting. Spartanburg is on the Atlanta-New York Air Route, stretching its long line of aviation beacons to guide pilots over this important air mail route. All mail planes stop at Spartanburg. There are three mail planes daily each way, with one plane in each direction carrying both mail and passengers.

#### HISTORIC

Within a relatively small radius of Spartanburg are a number of points of historic interest. Cowpens Battleground, where Tarleton's dragoons met defeat at the hands of Morgan's riflemen; Kings Mountain, where the American frontiersmen killed or captured Ferguson's entire command; Musgrove's Mill, famous as the scene of some of the stirring adventures of "Horseshoe Robinson," home of Mary Musgrove, Revolutionary heroine, and scene of an important skirmish between the British and the Americans; Cedar Spring, scene of two Revolutionary battles. Just west of Spartanburg runs the line which was once the boundary between the South

Carolina settlements and the Indian country. A relatively short distance away, at Clemson College, is the Calhoun mansion, now a museum, but once the home of John C. Calhoun. Visitors should see all of these places, and also the model mill villages of Lyman, Pacolet and Whitney.

#### CIVIC ORGANIZATIONS

Civic organizations, in addition to the Spartanburg Chamber of Commerce, are the Rotary Club, the Kiwanis Club, the Lions Club, the Monarch Club, the American Business Club and others. Among the social agencies are the Red Cross, Tuberculosis Association, Baby Hospital, and Y. M. C. A.

Public buildings include the recently completed Federal Building, the City Hall, the Kennedy Public Library and the Spartanburg County Court House.

Spartanburg is a city of the New South—the South which indeed has lost nothing of its romance and charm and culture—a city of great factories and distributing houses, of railroads and automobiles and airplanes, but a city of great colleges and schools and churches. Spartanburg is a living, vital community, and one in which it is good to visit, live and work.



Administration Building and Chapel of Wofford College

## ORIGINAL ARTICLES

### \*VINCENT'S PNEUMONIA A Case Report

By Clay Evatt, M.D., Greenville, S. C.

Vincent's infection of the lungs and bronchi is not an infrequent complication of Vincent's Infection higher up in the respiratory tract, but the infection of the upper respiratory tract secondary to a primary pneumonia is rare. I found no record of such a case in the literature. Several observers(1) have reported the infection extending from the larynx down the trachea to the lungs, there to produce ulcers, abscesses, gangrene, empyema or pneumonia. Rothwell(2) in 1910 named the latter condition Bronchial Vincent's Angina. Smith called it Bronchopulmonary Spirochetosis. Some of the cases recorded got well; some did not. Some of them gave histories of exposure to some other infectious person, but most of the primary lung cases are sporadic. My case was clinically in every way a typical lobar pneumonia and I report it as such. It was not only a primary lung infection but after four days the illness became complicated by Vincent's infection of the throat.

#### CASE REPORT:

L. J., age 18, colored, male, a baker, was seen in his home June 11, 1932. The history was entirely irrelevant. Chief Complaint, pain in his lumbar region. There was no history of exposure to Vincent's. Physical Examination; temperature 103, pulse 104, respiration 22. No foci of infection were found in the teeth, tonsils, prostate or elsewhere. All of the usual causes of pain in the lumbar region were ruled out. Palpation and auscultation revealed new sounds deep in the right axilla and in the back over the right lobe. This, together with the bounding pulse, elevation of temperature and ashen paleness peculiar to the negro when his oxygenation is interfered with, lead to a tentative diagnosis of Pneumonia. The disease ran an uneventful course of the usual Pneu-

monia until the fourth day when he seemed more cyanotic than before, and was in a profuse cold sweat, clammy, temperature 104, pulse 106, respiration 69. He was seemingly in shock and quite toxic. On that morning the patient complained of sore throat and difficulty of swallowing. The pharynx which had hitherto shown no pathology, was now completely covered by a pearly white, tightly clinging membrane. The membrane extended from the anterior pillar on the left all the way across the posterior pharynx to the anterior pillar on the right. Also there was a loop or curtain of membrane hanging from the uvula to join its fellow on either side. In the lower part of the tonsils and pharynx the membrane gradually lost its identity merging into the boggy, swollen, oozy-looking mucous membrane. There was no bleeding, even when the membrane was peeled off. The membrane was not the usual grayish white membrane of Vincent's, but the typical glistening, pearly-white membrane of Diphtheria. Smears and cultures were made and while waiting for a report the most of 40,000 units of Diphtheria antitoxin were injected, the remainder, a little, was used locally as a swab. Examination of the smears showed not Diphtheria, but Vincent's, so .6 gm. of Sulpharsphenamine was given in the vein immediately, and the dose repeated next day. The throat was swabbed with Bismuth Violet three times daily interspersed with perborate of soda washes. On the sixth day the membrane disappeared and by the ninth day the throat was entirely well.

The fifth day, the day of the second Sulpharsphenamine injection, the Pneumonia began healing by lysis. The pulmonary sputum also showed abundant spirillae and fusiform bacilli. The remainder of the recovery though dramatic was uneventful.

#### TREATMENT

From the literature it seems that Neo-arsphenamine or Sulpharsphenamine is the most used treatment. I know of no real reason for

\*Read before the Twenty-Sixth Annual session of The Fourth District Medical Association, Greenville, S. C., September 20, 1932.

a choice between the two, except in children or adipose individuals where intravenous medication is difficult, of course, Sulpharsphenamine is preferable.

#### COMMENT

In many cases of Vincent's throat I have gotten better results with Bismuth Violet swabs and perborate washes than with any other local medication. Whether this is due to the specific action of the Bismuth as is the case in the Spirochete of Syphilis, I do not know. In cases of suspected Diphtheria it seems wise to give the antitoxin while the microscopic examination is being made, then if the Diphtheria diagnosis is confirmed, the right thing has been done. If it proves to be some other disease, the serum does no harm and more appropriate treatment may be instituted.

This is the first case of pneumonia I ever treated whose chief complaint was pain in the lumbar region. Sir Wm. Osler tersely said that a woman's pleura extends from her neck to her pelvis; I believe he might have also added that a man's stretches from his teeth to his prostate.

I report this case of primary Vincent's Pneumonia because of its rarity, but more especially because of the profound lesson for us in the Diphtheroid throat.

Rhodenberg (3) reports a child who was given repeated doses of Diphtheria antitoxin for a jaw infection, the bone all the while becoming more deeply eroded. Examination of a smear revealed not, Diphtheria, but Vincents and the life was saved by a more appropriate treatment.

It is my opinion that many cases of supposed Diphtheria are not Diphtheria at all, but die a Vincents death, the doctor meanwhile thinking the antitoxin no good, or that treatment was begun too late.

#### CONCLUSIONS

1. The case here reported was a typical lobar pneumonia caused by a primary Vincents infection.
2. It was sporadic.
3. The disease of the throat was secondary to that of the lung.
4. To diagnose Diphtheria without a microscopic examination may prove disastrous.
5. Recovery was prompt after Sulphars-

phenamine and Bismuth Violet treatment was instituted.

Appreciation is hereby expressed to Dr. T. R. W. Wilson, of the Greenville City Hospital, for the laboratory work referred to in this report.

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#### PURPURA HEMORRHAGICA: TREATMENT OF A CASE WITH INTRAMUSCULAR INJECTIONS OF WHOLE BLOOD\*

*A. Ellis Poliakoff, M.D., and G. A. Neuffer, M.D., Abbeville, S. C.*

The treatment of purpura hemorrhagica by the general practitioner in a small town presents many difficulties and especially at the present time when the patient is financially unable to go to one of the larger centers. The facilities for blood transfusions are limited due to limited laboratory apparatus and to the very small number of transfusions done. These things also make a splenectomy impossible.

Therefore, when a case of purpura hemorrhagica presents itself for treatment, the general practitioner is confronted with many difficulties. He is in a quandary as to what to do.

We were confronted with this problem. We could not give transfusions and the patient's people could not take him to one of the larger centers.

We prescribed elixir cupriferrum Squibb, syrup of calcium lactophosphate, ergot and later on Haliver oil with viosterol 250D.

#### REPORT OF CASE

Bobbie A., aged 5 years is a white boy who is being cared for by Mrs. A. who adopted him when he was less than 2 months old. His

\*Read before the Tri County Medical Society, Greenwood, S. C., January 27, 1938.

mother died with pernicious anemia when he was only 5 weeks old. He has one sister who is in good health. His father is living and in good health. This is all the family history that could be obtained.

Bobbie has been brought up under good care and surroundings. He is a bottle fed baby. As a baby, he suffered with attacks of vomiting. These attacks kept him underweight. He would have one of these attacks every two to four weeks until he was four years old. One of these attacks would last about a week. He could retain little by mouth during one of these attacks. Since he became four years old, he has only one attack a year.

He has been innoculated against diphtheria, typhoid and vaccinated against smallpox. As a rule he enjoys good health. He seldom has a cold.

In September 1932, Mrs. A. noticed blue spots on his chin, around left eye and on the upper part of the abdomen. She thought they were the result of a fall. These spots were present for three or four weeks.

About this same time, he blew two pieces of fatty looking material from his nostrils. Following this, he began having a purulent discharge from his nose which contained blood at times. On some occasions, he would have a large amount of purulent drainage from his nose. He would also have some kind of dark red or black masses in his nose. They were narrow and would be about an inch in length. They were more numerous in the morning but would appear during the day.

New blue spots would appear on his body from time to time. These spots would be of a light blue color and resembled a bruise.

One night about the middle of November, patient sneezed and his nose began to bleed. This was stopped by placing a piece of cotton in his nose. Packing the nose was not necessary. After this, he would have soft blood clots or crusts in his nose. They would have to be removed several times during the day.

About the last of November, there appeared a large ecchymosis on the back of his right forearm. This was followed by another one slightly larger on the inner surface of his right

forearm. This one had a small mass in the center of it about the size of a pea.

On December 18, patient sneezed. Immediately after this his nose began to bleed. Blood dripped freely from his left nostril and also ran down his throat. It was necessary to pack the nose to control the bleeding. Cotton dipped in Thromboplastin was used. After packing the nose, there was a serous drainage. His nose was left packed for about two days. When the packing was removed, there was no bleeding. However, there was serous drainage present for about two days.

Following this, crusts about a half inch long would form in his nose. The part of the crust back in the nose would have a small spot of blood on it. Mrs. A. uses nasal drops which keep the crusts from forming.

#### Physical examination:

There were several light blue spots scattered over his body. Tonsils are enlarged and infected. No glandular enlargement present. Remainder of examination was essentially negative.

#### Laboratory findings:

December 4, 1932.

Hemoglobin—70 by Tallquist scale.

Color index—0.7.

Coagulation time—1.5 minutes.

Bleeding time—3.5 minutes.

Erythrocytes—5,070,000.

Leukocytes—8,000.

Erythrocytes, color—archromia.

Poikilocytes

Leukocytes

Small and large

Lymphocytes—19 per cent.

Endotheliocytes—13 per cent.

Polynuclear

Neutrophiles—65 per cent.

Eosinophiles—1 per cent.

Basophiles—2 per cent.

January 9, 1933.

Hemoglobin—75 by Tallquist scale.

Color index—0.7.

Coagulation time—6.0 minutes.

Bleeding time—3.5 minutes.

Erythrocytes—5,440,000.

Leukocytes—11,900.

Erythrocytes, color—archromia.

Poikilocytes  
 Leukocytes  
   Small and large  
   Lymphocytes—45 per cent.  
   Endotheiocytes—4 per cent.  
   Polynuclear  
     Neutrophiles—50 per cent.  
     Eosinophiles—0  
     Basophiles—1 per cent.

Platelet count 90,000.

Both smears negative for malaria.

Urinalysis was negative.

#### Treatment:

As mentioned before patient was given syrup of calcium lactophosphate 1 dram (4 c. c.) three times a day; elixir cupriferrum 0.5 dram (2 c. c.) three times a day and on December 18, he was given fluid extract of ergot 10 minims (0.7 c.c.) every two hours for his nosebleed. In January, he was started on Haliver oil with viosterol 250D 3 minims (0.2 c.c.) three times a day. This was later increased to 6 minims (0.4 c.c.) three times a day. He was put on liver and bone marrow.

But this treatment was not sufficient. The patient did not improve on it. New blue spots continued to appear. Going over the literature, we found where Orway and Gorhan had discovered that the subcutaneous or intramuscular injections of whole unmatched blood, 20 c.c. every day or every other day, was of benefit. The favorable influence of such injections may depend on a foreign protein reaction. We decided to try this treatment.

We secured several donors and had Wassermann tests made on them. On December 23, we gave the patient 20 c.c. of whole unmatched blood into the gluteal muscles. This was repeated every two days for six times and then to be given every seven days for four times.

Improvement was noted in the patient as soon as he began to receive the injections. Blue spots appeared less frequently.

#### COMMENT

The disease purpura hemorrhagica takes its name from the purplish spots appearing on the skin. These spots are due to the extravasation of blood into the skin. Purpura hemorrhagica is classified according to most workers into two general groups:

#### I. Thrombocytopenic Purpura.

#### II. Nonthrombocytopenic Purpura.

These two groups are further divided into the Essential or Primary and the Symptomatic or Secondary.

In the thrombocytopenic purpura, we have a deficiency in the number of platelets. The platelets themselves are said to be normal but their number decreased. In the other type, there is no deficiency in the number of platelets.

After considering the various types of purpura hemorrhagica, hemophilia and the leukemias, we diagnosed our case as one of Primary Thrombocytopenic Purpura.

In this type of purpura, we have a deficiency in the number of platelets. The cause of this is unknown. In a recent article in the Journal of the American Medical Association, Jones and Tocantins, state that capillary hyperpermeability, or capillary weakness is essential for the production of hemorrhagic phenomena. They say the hemorrhagic phenomena may occur due to the capillary hyperpermeability alone or due to both capillary hyperpermeability and deficiency of platelets. Some cases present no platelet deficiency while in others the platelets may be reduced tremendously. In these cases when the platelet count is below 75,000, the hemorrhagic phenomena appear.

We were unable to do but one platelet count in our case and that after the patient had received six injections of whole blood. The platelet count was 90,000. The coagulation time was within normal limits. The bleeding time is the one thing that does not fit in exactly. On two occasions, it was 3.5 minutes. It was not taken when patient had his severe nosebleed.

Since receiving the blood, the patient has become stronger. Only three new blue spots have appeared and each one of these at a different time. There have been no new blue spots within the past two weeks. He has had no more nosebleed. He has been gaining in weight and he looks much better. His cheeks have a rosy color to them and the conjunctivae have a better color. In other words, he is much improved.

He is still under our care and we are watching him with much interest.

#### CONCLUSIONS

1. This is a case of purpura hemorrhagica of the Primary Thrombocytopenic type.

2. The case improved with intramuscular injections of whole unmatched blood.

3. This method of treatment can be carried out in the home.

## TUBERCULOSIS ABSTRACTS

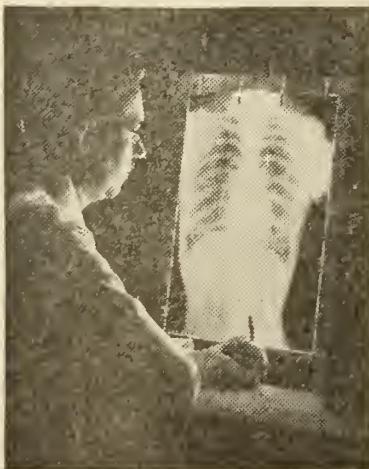
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No. 4



FROM WHOM DID HE GET IT?  
TO WHOM DID HE GIVE IT?

The modern physician appreciates that whenever a case of tuberculosis is discovered every contact should be examined. To support him in this practice tuberculosis associations throughout the country are this year striving to focus public attention, through the medium of an educational campaign, on the communicability of tuberculosis. The slogan is, "Tuberculosis—From whom did he get it—To whom has he given it—Examine and protect every contact." Incorporated with these words is an illustration showing a doctor examining an X-ray plate to suggest also the necessity of relying on this instrument of precision for making the diagnosis. One of the active crusaders of this educational movement is J. Arthur Myers of the Department of Preventive Medicine and Internal Medicine, University of Minnesota. Space permits only a few quotations from his William Snow Miller lecture, bearing on the communicability of tuberculosis.

### EXAMINING TUBERCULOSIS CONTACTS

The slogan of last year's tuberculosis educational campaign, "Tuberculosis causes tuberculosis—every case comes from another," tells the whole story, namely, that tuberculosis is a communicable disease. (The 1933 slogan is a repetition, with slight modification, of the same idea.) The recognition of this fact has done more to change conditions with respect to the incidence of tuberculosis than all of the steps that have been taken toward the control of this disease. The unfortunate fact remains that, although we have known the disease to be communicable, we have not always used this knowledge in the expenditure of funds and in the dissemination of publicity intended for tuberculosis control.

\* \* \* \* \*

Now we have been compelled to learn a good part of our tuberculosis over again, we are visualizing its control as never before. Optimism is being expressed everywhere by those who have carefully followed the recent developments in our knowledge of tuberculosis. The following practical applications of the recent developments give us an idea of what is possible and justify much optimism:

Dr. Hilleboe became curious about the tuberculosis status of 60 children four years old and under who were enrolled in a nursery school. He applied the intracutaneous tuberculin test and found that four of them were positive reactors. Since every case comes from another, he began searching among their associates. An early revelation was that two of the teachers had tuberculosis, one definitely of the adult type. Members of the families of these children are now being studied for tuberculosis. Finding the source and ending the exposure is

the best treatment for the children. Treatment of the patients who infected the children may begin much earlier than it would have without such an investigation, and such treatment should be the means of saving large numbers of other persons from unsuspected exposure.

Simons and Hilleboe applied tuberculin tests and X-ray examinations in a case-finding endeavor in a small rural community with the result that 19 new cases of tuberculosis were discovered. When they enlisted the support of the veterinarians 18 cows supplying milk to the community were found to be infected. Gibbons has done similar work in another rural community. If their work is continued, and tuberculin-testing is more generally applied to the children of the community at six-to twelve-month intervals, the time will be near at hand when the advanced case of tuberculosis will no longer be found in the community and when tuberculosis in any stage will be a rare disease.

#### *Overcoming Diagnostic Difficulties*

There have been two stumbling blocks in our present program of tuberculin-testing and X-ray examinations of positive reactors as a case-finding measure. The first is the objection presented by parents and others to instrumentation in the administration of tuberculin. In the hands of most workers the Moro test has not proved as accurate as the Pirquet test. However, Lovett has called attention to the percutaneous test, which consists of rubbing the skin with ether until hyperemia appears, in an attempt to remove the oil from the pores. Then a preparation containing tuberculin is rubbed into this area of skin. She finds this test fully as accurate as the Pirquet test but not as accurate as the Mantoux (intracutaneous) test.

The second stumbling block has been the cost of X-ray films. If one wished to make a tuberculosis inventory of 25,000 school children or 10,000 university students, the cost of the X-ray films alone was stupendous. As an example of the attempt to solve this difficulty may be cited the experiment of the Queensboro Tuberculosis and Health Association which stimulated a manufacturer to develop a paper X-ray film on rolls. With the special equipment devised it is possible to make a thousand chest exposures in a single day with one machine.

In applying this case-finding method to university students, Diehl calls attention to examinations of 2,500 entering students in the fall of 1931. Among approximately 800 reacting positively to tuberculin and having X-ray film examinations of the chest were found 15 cases of adult type of pulmonary tuberculosis in addition to many cases of pleurisy and childhood type of tuberculosis. One of the cases with adult type of pulmonary had advanced disease, five were moderately advanced, and nine were minimal. The control of these cases with reference to dissemination of tubercle bacilli on the campus, as well as individual treatment of the cases, is a service worth much more than it costs the institution and the student body. The fact that more than a half-dozen great American universities instituted similar tuberculosis-finding procedures in the fall of 1931 is of great significance.

Sanatoria are beginning to employ full-time epidemiologists, whose duty it is to work with family physicians of patients admitted to their institutions in finding the source of their patient's disease. Moreover, they place under examination and observation those persons who have been in contact with their patient. This procedure at the Minnesota State Sanatorium is proving very effective.

#### *Collapse Therapy a Preventive Measure*

Recent advances in collapse therapy are doing great good for individual patients, but a greater good by closing off lesions which otherwise would be sources of exposure to vast numbers of people. The discovery of the fact that many patients may remain ambulatory while artificial pneumothorax is being induced, or soon afterward, promises to do much to relieve congestion in rooms, wards, and hospitals for tuberculosis patients, to relieve the patient of economic strain, to relieve the tax-payer of a considerable burden and to prevent the spread of tuberculosis. The chief problem is one of finding cases suitable for such treatment that is, before the disease has become extensive and there is much breaking down of tissues. Past experience has taught us that unless such case-finding methods are used in order to detect the disease in the earliest possible state, many are too advanced to respond well to any form of treatment. Therefore, we must not wait for

patients to come to us with complaints, but must go out and find them months and even years before they would develop symptoms.

A summation of the facts of tuberculosis now at hand points to prevention of the initial and all subsequent infections as the goal for which we must strive. This means that pressure must be brought to bear on all the modes

of attack on tuberculosis now in existence, so that each will function at the highest possible efficiency. The principal methods are all based on case-finding, so that the source of exposure may be stopped.

*Recent Developments in Our Knowledge of Tuberculosis, J. Arthur Myers, Am. Rev. of Tuberc., Feb., 1933.*

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M. D., F. A. C. S., CHARLESTON, S. C.

### THE OPHTHALMOSCOPE AS AN AID TO THE GENERAL PRACTITIONER

Our wide awake Editor-in-Chief requested his various Associate Editors in special lines of medical practise to contribute something that would show in part the relationship of that speciality with general medicine.

This is an interesting subject and a few brief references may be of interest.

In the obstetrical field—and since that comes first in life it may be well to here consider it first—in the obstetrical field when the attending physician finds his pregnant patient with a high blood pressure, he is naturally concerned. There may be one of three conditions present, each one is capable of being interpreted by the consulting ophthalmologist. One is the toxemia of pregnancy. That is the condition that he is anticipating and would like to know if it is present or not. The ocular symptom complex of toxemia of pregnancy is retinitis of pregnancy, in which case the ophthalmoscope will reveal a narrowing of the blood vessels, a spasm condition analogous to that described by Volhard in some cases of retinitis of nephritis. There are also some hemorrhages and retinal edema which at times may be so great as to become a detachment of the retina. As this is written a case has returned to the obstetric ward which on her last admission had a retinitis of pregnancy with a marked detachment. A Gommin was then done on one eye. There are also exudates in the retina, which in that woman have been absorbed or changed into pigment or hard white spots.

These cases of retinitis of pregnancy generally need to be delivered. It is not safe to let them go to term. Though each case has to be individually decided, as to period of pregnancy and severity of retinal symptoms. Some cases were watched and a few got along with no serious permanent damage, but in others the blood pressure kept increasing and the retinal lesions became more damaging to the vision and had to be delivered, leaving the mother with permanent visual damage, and sometimes only a dead baby. It is a question whether the little gain in intrauterine growth compensates for the danger and damage to the vision.

The second class of case is one that we see quite often in the obstetrical ward and that is a pregnant woman sent in because she has a high blood pressure. Here the ophthalmoscope shows an arterio-sclerosis of essential hypertension of the retinal arteries with no signs at all of toxemia of pregnancy. In some of these cases there has been, before ophthalmoscopic examination, quite a good deal of anxiety about them, which anxiety was in part allayed by the ophthalmoscopic examination showing the high blood pressure to be arterio-sclerotic in origin with no appearance in the retina of toxemia of pregnancy. Most of these cases have been sent back to their homes to be watched, and most of them have gotten along nicely.

The third class of pregnant women, in which there is a high blood pressure, is that in which in addition to signs of sclerosis of the retinal arteries we see also the signs of retinitis of

pregnancy. In this type of case I have been especially anxious as to the vitality of the mother for in addition to the damage present in her vascular system there is the toxemia of pregnancy and it surely seems very unadvisable to allow these patients to continue in their pregnant state; because, knowing what we do about the danger of emboli or thrombi or arterial obliteration, occurring in cases in which there are endothelial lesions, we feel that special care should be taken in these cases.

Our president, Dr. J. R. Young, in an interesting paper on Gall Bladder Disease recently spoke of the anginoid symptoms that were often relieved by operation. Some of the discussion of his paper hinged on whether there was or was not a cardiac angina present before the gall bladder operation. This question was discussed by Dr. Wilson and Dr. Cannon. Post-mortem checks have shown that the presence of coronary sclerosis can in over 94 per cent of cases be determined by an ophthalmoscopic examination, which is of some help in some cases.

To take another illustration. The attending physician finds his case presenting albumen, casts, and symptoms of a damaged kidney. Is the condition a primary glomerulonephritis or is it an arteriolar sclerosis of the glomerular arterioles of the kidney? An ophthalmoscopic examination will determine that.

You have a cardiac hypertrophy, with leaking valves. Is it a hypertrophy from the valvular disease or from an arteriosclerosis with the valvular disease in addition? An ophthalmoscopic examination will help to determine that.

The blood pressure may be low but there may be a marked arteriolar sclerosis Grade III, as was seen in the obstetrical ward also while this resume was being written. So that your blood pressure instrument cannot be relied upon for determining either the presence or the

degree of arteriosclerosis. In the cardiovascular service hundreds of cases are ophthalmoscopically examined to aid in determining the presence or absence of arteriosclerosis, and if present its type and grade, and sometimes the duration, at least of the retinal lesion. This information is valuable when correlated by the internist with the other symptoms.

The ophthalmoscope frequently reveals only too clearly the amount of structural change present in the vessels. For instance, the internist can diagnose a malignant hypertension if there be also certain symptoms referable to kidney dysfunction, but the ophthalmoscope can diagnose malignant hypertension with a kidney that continues to function satisfactorily even to death, death being due to cerebral accident or cardiac failure.

Anemia has a picture, also leucemia. Pernicious anemia has rather characteristic hemorrhages, thus helping to distinguish from other types of anemia. Septic endocarditis has an ophthalmoscopic picture, but I have seen it very seldom. The ophthalmoscopic picture of syphilis varies, as the selective nature of the disease varies. The neuro-syphilis type has its ophthalmoscopic counterpart in the well known optic nerve atrophy, while the type of syphilis, where secondary lesions were more common, is ophthalmoscopically represented by syphilitic choroiditis or a syphilis of the retinal vessels. Sometimes the ophthalmoscope is needed as a valuable aid to decide if there is or is not a syphilitic infection present.

Skull injuries frequently show ophthalmoscopic evidences of the seriousness and degree of intracranial damage, but these ophthalmoscopic evidences must be correlated with other symptoms. They are not always pathognomonic of the kind of treatment to be used. Briefly stated, we find the ophthalmoscope of help in many medical and surgical conditions.

## DERMATOLOGY AND SYPHILOLOGY

By J. R. Allison, M.D., Columbia, S. C.

### A DEFINITION OF ALLERGY

Allergy is a comparatively recent development in medicine, and there is no subject in medicine today on which so much is written and about which there is so much confusion. The cause of this confusion is that the exact nature of allergy and all conditions that are included under this head are not definite. In 1892, Besnier described a group of conditions called prurigo diathesis, chronic maladies with seasonal variations, which were often associated with asthma, hay fever and eczematous conditions. The term was later broadened to include skin diseases with associated constitutional background under the head of exudative diathesis. Later these so called exudative diathesis cases were studied in association with idiosyncrasy, anaphylaxis and hypersensitivity. Many leading authorities today believe that they are one and the same process, fundamentally, with only different variations in their manifestations, and all should be classed under the heading of allergy.

At one time, the only true allergic skin diseases that were considered definite were the so-called tuberculids and trichophytids. This allergic state was supposed to be due to toxins set free from the primary lesion.

A common example of this phenomena is found in ordinary fungus infection of the feet associated with a mild vesicular eruption of the hands, the latter an allergic condition of a toxic nature due to toxins from the fungus infection set free in the general circulation. We call this trichophytid of the hand. We know now that allergic states are not confined to a simple and definite process as described above. Now it is applied to all forms of hypersensitivity and embraces a wide form of cutaneous diseases and constitutional conditions like hay fever, asthma, migraine, and many other conditions. By hypersensitivity is meant, that state in which an individual reacts specifically to contact with a given substance with symptoms that fail to develop upon similar contact in a normal individual of the same

species. If the substance involved is nontoxic the normal individual will show no reaction whatever, and the hypersensitive individual will show reaction. If the agent is toxic the hypersensitive individual will react to subtoxic amounts and the normal individual will not react to subtoxic amounts.

Another definition of allergy by Klauder is, "that the mechanism by which normal people become protected against foreign protein and nonprotein substance is absent. The normal operation of this defending mechanism leads to a state of immunization, but its absence leads to a state of sensitization." Bruno Bloch gives a very scientific definition of allergy which is as follows: "Allergy is that state which has as its basis the property of certain groups of cells (organs) of the living organism to react in a specific manner when brought in contact with a substance which is, as far as is known, foreign to the organ or cells; the characteristic of this specific pathologic process lies in the fact that it is caused by the reaction of this exogenous substance with its specific cellular fixed antibody. The basis and the essence of allergy is the ability of the living cell to react with the production of specific antibodies to the stimulus of foreign substances, which are therefore called antigens, as well as the fact that the contact of the antigen with its specific cellular fixed antibody causes a disturbance of cellular life which usually results in an inflammatory reaction."

From this definition it is seen that the allergic state is supposed to be due to the free circulation of specific antibodies in the blood and the test of true allergy, according to this definition, has been definitely proven for many conditions by the method discovered by Prausnitz and Kustner. The technique of this test is as follows: 0.1 cc. of the serum of a non-allergic person sensitive, say, to rag weed, is injected intracutaneously into the skin of a normal person, and one day after the antigen (rag weed) is applied to the site of the injection. A positive reaction is shown by the de-

velopment of a wheal with an erythematous zone. This is a so-called passive transfer of the allergic state and has been used a great deal in the study of these conditions and is the final proof of the presence of an allergic state. This test definitely proved in true allergy the presence of free antibodies in the circulation, which may be either protein or non-protein in character and which are capable, when in contact with specific antigens, of causing a local reaction in the form of different manifestations of allergy—urticaria, eczema, drug idiosyncrasies, hay fever, asthma and many other conditions. This test comes nearer giving us a true scientific explanation of the chemistry of the allergic state than any other tests known today. Bruno Bloch con-

cludes from his definition and the Prausnitz-Kustner reaction that anaphylaxis, idiosyncrasy, and allergy differ only in a quantitative rather than a qualitative way. In other words, to the average medical man, these conditions—anaphylaxis, idiosyncrasy and allergy, and hypersensitivity are one and the same condition differing only in quantity.

Allergy is not a passing fad in medicine and has come to stay. From the foregoing one can see that while there are many unscientific claims for allergy there is a considerable portion founded on well established scientific bases and one cannot help but believe that the future study and discoveries in allergy will add greatly to our present knowledge of medicine.

## NERVOUS AND MENTAL DISEASES

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### EPILEPSY

The data in regard to the prevalence of epilepsy are not very exact. It is possible that this is due to mild and unusual forms of the condition which make it unrecognizable, and also to secrecy on the part of the patient and his relatives concerning it because of the humiliation they feel.

In Archives of Neurology and Psychiatry, 1923, C. B. Davenport gives a table showing that of 2,500,000 drafted men, the rate of epilepsy per thousand was 5.15. In the same table, Amman's estimate for the whole country of Switzerland is 5 per thousand. Interesting statistics are also furnished by the South Carolina State Hospital. On March 24, 1933, the census of the institution was 3394. Of this number, 303 or 8.9 per cent were diagnosed as having epilepsy. During a period of six years—from January 1, 1927, through September, 1932—a total of 5385 patients were admitted to the hospital, 275 or 5 per cent of whom were epileptic. These figures for the South Carolina State Hospital perhaps are greater than those of institutions in other

states, especially in states that have established epileptic colonies.

Regarding age incidence, the Thirty-Second Annual Report from Craig Colony, Sonyea, N. Y., on January 1, 1926, shows that the majority of cases develop from the first to the twentieth year. After that there is a marked decline.

Among the causes of epilepsy the following may act directly or indirectly as etiological factors: heredity, injuries during birth, trauma after birth to the central nervous system, tumors and cysts of the brain, hydrocephalus, infections, alcohol, disorders of the gastro-intestinal tract, cerebral arteriosclerosis, and disorders of the glands of internal secretion.

In all cases a thorough examination should be made in an effort to determine the cause and if possible its removal. Often the condition may be cured more readily in the beginning than if allowed to go unchecked. It is very important to use prophylaxis; that is, try to prevent the occurrence of the epileptic seizures.

Each case will require its own special outline of treatment, depending, among other

things, upon age, frequency and severity of the convulsions. The following are only a few suggestions offered along this line:

1. *Diet*: The meals should be served regularly; supper should be light, carbohydrates reduced, sweets avoided, and the diet made up principally of fats. A small amount of lean meat is permissible. In certain cases, for instance those with hypertension, it may be advisable to limit the entire liquid intake for twenty-four hours to one and a half quarts.

2. *Medical Treatment*: Luminal, bromides, or phenobarbital may be used satisfactorily to control the convulsions. In using phenobarbital for the adult, give a half a grain three times a day, and double the dose at night, if necessary. Free elimination should be maintained. If necessary, a saline purge twice a week is recommended. The medicine which is pre-

scribed to help control the convulsions should be taken as regularly as the meals.

3. *Habits*: The patient should be instructed in regard to habits. He should obtain sufficient rest in bed, exercise, occupation, plenty of fresh air, and avoid stimulants and excitement.

The condition known as Status Epilepticus requires special treatment. Place patient in a darkened, quiet room. Empty rectum and colon with an enema. Chloral or bromides may be administered by rectum. In stopping a series of fits, prolonged anesthesia with ether or chloroform is of value. Lumbar puncture and withdrawal of some spinal fluid is also of value in this extreme condition.

Any individual who has had one epileptic seizure should thereafter indulge in all the activities of life with moderation.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "NON-MALIGNANT NODULES OF THE BREAST CAUSED BY CONSTRICTING BRASSIERES"

The decrees of health and fashion are not always in accord. We have only to recall the bandaged feet of the Chinese women, the tight corseting of recent date, and the high-heel shoes of today. In this category is a deformity the result of the present day style of straight lines—namely, non-malignant nodules of the breast resulting from prolapse. The subject is discussed by Dr. Lilian J. P. Farrar in the J. A. M. A. vol. 95, pg 1329, Nov. 1, 1930.

With the engaging of women in games such as golf and tennis there arose the demand for greater freedom in muscular activity. Their clothes were fashioned after those of their younger brothers. This necessitated an "absence of the breasts." To accomplish this desideratum the breasts were strapped tightly down and against the body. The style became general and applicable even to evening dress.

The breasts are loosely attached to the over-

lying skin and the fascia over the pectoralis major muscles. Firm tight bandaging so as to effect straight lines forces them down and results in prolapse. The circulation is interfered with and the fat disappears. These breasts not infrequently extend as low as the umbilicus. The upper portion consists solely of a double thickness of skin by which it is attached to the chest wall. The dependent portion is made up of lobular breast tissue which feels nodular due to the absence of fat. Often it seems as if a definite tumor is present. So much so that experienced surgeons have in many instances amputated them under the impression that carcinoma was present.

The plastic operation for suspension of such prolapsed breasts necessitates transplanting the nipple to a higher position, and resecting the lower portion of breast tissue. The operation is extensive and mutilating. Ducts are severed. There is more danger of caking and abscess formation should lactation take place.

This condition can be prevented by proper nonconstricting support of the breasts. Such

support will improve greatly even advanced cases in individuals under 25 years of age. This is described as "light elastic webbing fastened by elastic lacings in the back, with two firm straps over the shoulders buckled in the front or the back." The author has made a partic-

ular study of these cases and has had about fifty under observation and treatment for some period of time. She suggests that this abnormal condition may be a predisposing factor in the development of cancer.

## GASTRO-ENTEROLOGY AND PROCTOLOGY

By W. T. Brockman, M.D., Greenville, S. C.

A well known Southern Internist has said the chief difference between an internist and a general practitioner is, that the internist does a careful rectal examination in every routine physical examination.

It requires very little special equipment to examine satisfactorily any case complaining of a rectal disorder and every physician should be able to give his patient a clear and concise explanation of the source of his rectal discomfort.

By far the most important consideration is the position the patient is placed in to obtain proper exposure of the parts and for routine examination, either the lithotomy or inverted position is considered best. To demonstrate hemorrhoidal varicosities either the lithotomy position or a position with the patient on left side with both thighs flexed on the abdomen is satisfactory. For proctoscopic inspection the knee chest or better the inverted position is more satisfactory.

With the patient in position a close survey of the external parts is next in order and can be best accomplished by having someone pull the buttocks apart. In this way pruritic skin, fissures, external skin tags (sentinel pile) external varicosities, and some anal ulcerations can be observed. Also fistulous opening and indurated swollen areas of forming or formed

abscesses can be seen. Then with a gloved finger the examiner should explore the anal canal for hypertrophied anal papillae, anal ulcerations, polyps, strictures, carcinomas, impacted feces, foreign bodies, etc. In the event that pain is too severe to allow co-operation on the part of the patient then a swab of 10 per cent or 15 per cent cocaine solution in K Y jelly placed into the anal canal and left for five to ten minutes will give better relaxation and hence a more satisfactory examination.

Instruments necessary are very few but should include some form of bivalve speculum, a medium length proctoscope and either an anoscope or Brinkerhoff window speculum for observing and treating internal hemorrhoids.

Proper exposure of the parts with good lighting and of course a working knowledge of normal and abnormal tissues will in most instances result in an accurate diagnosis enabling the general practitioner to either direct his patient to the doctor best fitted to treat him or to advise and intelligently accomplish such treatment he thinks necessary himself.

Many minor rectal disorders can be easily handled by the general man but even such a simple procedure as injecting hemorrhoids should not be attempted without proper instructions as to technique, type of cases suitable for the injection treatment, etc.

## PEDIATRICS

R. M. POLITZER, M. D., GREENVILLE, S. C.

During the past two decades in this country there has been a sharp increase in the number of specialists, and a corresponding addition in South Carolina to the ranks of the urologists, ophthalmologists, pathologists, radiologists, and pediatricians. But even so today in South Carolina, the vast majority of doctors are general practitioners. Of these practically all attend babies and children. Some of these family doctors enjoy working with juveniles, and a considerable number because of study and training have reached a high degree of proficiency. But here and there one still finds a doctor who spends more time prescribing for a sick child, than he does in making a diagnosis. And worse yet, partly because of the economic situation, but more particularly to please his clientele, and because it's easier, some do quite a bit of medical practice over the telephone. Notwithstanding all that has been written, and in spite of graduate courses here and there, we still find doctors who are of the opinion that a child is sick because of upset digestion; of worms; or even teething. In fact the diagnosis teething is made so often, that many mothers expect just that.

While there is no question but that the doctor is called in for relief of a symptom or cure of a disease, yet all intelligent people, regardless of occupation, and station in life recognize that it is essential to make a diagnosis. This is perhaps more necessary in the case of the infant or child, than in an adult; for the latter are more articulate, and at times are helpful in tracing the origin of a malady. While the laboratory, chemical, microscopic or radiologic, is at times a sine qua non, yet probably 80 per cent of diseases in childhood can be diagnosed by careful history taking and a thorough physical examination. If the doctor would keep a record of mistakes in diagnosis, he would find that in most instances, he failed to pay attention to some point in the history, or did not make some examination. That is he may not have known the previous residence of the child, or may have neglected to ask whether the baby had

been on orange juice. Quite often an examination of the ear is not made and the diagnosis of otitis is delayed until the mother reports that the ear is running. It is by no means rare for an empyema to be unrecognized for some time following a pneumonia, and one is satisfied to say that the consolidation is slow in resolving.

Therefore it is of some value to review some of the commoner diagnostic errors in the practice of pediatrics. Of course no one should be so ostrich-like as to believe that it is always the other fellow who makes all the mistakes. For the only doctor who does not commit sins of commission and omission is the one who has no practice.

Briefly and admitting that these are merely generalities, which of course have exceptions, your pediatric editor wishes to point out some of the commoner mistakes that have been forced on his attention in over fifteen years of pediatric practice.

1. Cyanosis in the Newborn does not necessarily mean congenital heart disease. More often it indicates hemorrhage of the brain or atelectasis.

2. Incessant and protracted crying in the breast-fed infant as a rule indicates hunger, rather than colic.

3. No man is justified in prescribing infant foods without knowing the composition of the food, and the characteristics of the baby. That is no food will agree with a baby even in the hands of the best feeder, if the infant has congenital syphilis, or hypertrophic pyloric stenosis. Telephone feeding is almost as pernicious as making a diagnosis over the telephone.

4. Too often because a nursing baby or a bottle baby has a digestive upset we hastily conclude that it must be due to the food. But not infrequently this is brought about by a tonsillitis, an otitis, or a pyelitis.

5. Vomiting or diarrhea is one of the most frequent manifestations of illness in babyhood. The causes of vomiting range through the whole gamut of diseases from the acute infections to nephritis, appendicitis, and brain tu-

mor. Diarrhea may be induced by bad feeding, especially too high a sugar, or nephritis, or pyelitis, and even pellagra or typhoid fever.

6. Allowing a poor appetite to account for a condition and labeling it undernutrition too hastily, is frequently unwise. Late hereditary syphilis, tuberculosis, defective teeth, diseased tonsils or sinus disease are often overlooked.

7. All paralyses in infants are not due to acute poliomyelitis. Scurvy, congenital lues and diphtheria sometimes account for the lack of motion.

8. Most eruptions are not due to syphilis. Eczema and food rashes are common.

9. An erythematous eruption is not necessarily due to scarlet fever. The appearance of the throat is often of greater importance.

10. All convulsions in children regardless of a history of dietary indiscretion do not originate in the digestive tract. Some are induced by malaria, some by meningitis, others by meningismus, yet others by spasmophilia which is too often overlooked. And one must constantly be on the lookout for epilepsy. It is rather rare to fail to recognize a convulsion in the course of uremia, but it has happened.

11. Edema does not always mean nephritis. More and more nutritional edema is being noted. Lack of vitamin B. seems to be the cause.

12. All heart murmurs in childhood are not necessarily organic. In fact those heard during an acute infection generally clear up. Further in judging the capacity of the child's heart, the murmur is usually of least importance.

13. While during childhood the diagnosis of appendicitis may be at times most easily and positively established, yet there are instances in which it is well to first rule out pneumonia.

14. When one knows but little about a given pediatric condition, and an opinion is requested, it is always easy to reply, 'Don't worry, he will outgrow it.' But often this is not true. And at times, as in infantile thyroid deficiency, it is not only false, but extremely bad. For valuable time is lost, and time here is so important.

One could without difficulty expand this list indefinitely. But the limitations of time and space, and especially the reader's patience forbid.

## DEPARTMENT OF ROENTGENOLOGY

R. B. Taft, M. D., Charleston, S. C.

### THE PRESENT STATUS OF ROENTGENOLOGY IN THE DIAGNOSIS AND TREATMENT OF MALIGNANT BONE TUMORS

By John M. Barnes, M.D.

From the x-ray department, Millard Fillmore Hospital  
Buffalo, N. Y.

Few diseases so rare as bone tumors have been more thoroughly studied during the past few years. The publications of Codman, Kolodny, Ewing, Connor, Geschichter and Copeland, Bloodgood, Phemister and many others have built up a literature of considerable proportions. As Moore(1) says in a recent article on this subject, "The incidence of malig-

nant bone tumors is not commensurate with the amount that has been written on the subject."

The stimulus for the investigative work back of these publications is to be found in the increasing general interest in the whole problem of malignancy and in the establishment of a bone sarcoma Registry by the American College of Surgeons.

Prior to 1920 a common language regarding bone tumors was practically non-existent. Indeed the differentiation between malignant and benign tumors was rather uncertain in many instances. It is not unusual in looking over the older records of these conditions to find a ten or fifteen-year-old lethal diagnosis and be confronted with a very much alive and relatively healthy patient. Many of the "cures" in older cases were accomplished by

amputation of an extremity which presented a benign osteoma or giant cell tumor.

But in spite of the vast increase in knowledge, bone tumors, in common with malignancy elsewhere, do not lend themselves to dogmatism. Much has been done in grouping and classifying the different tumor types. From the clinical standpoint it is questionable whether too much subdividing has not occurred. In this connection Boyd(2) says, "A bewildering variety of names is encountered in the literature, these represent an attempt at minute subdivision. It appears very doubtful at the present time if anything is to be gained by such subdivision."

We must certainly differentiate the classifications based on fine pathological distinctions of genesis and those devised as a guide to prognosis and treatment. This becomes increasingly apparent when one considers the multiplicity of microscopic diagnoses returned by different pathologists on the same tumor tissue.

Because of simplicity, priority and probable universality through its acceptance by the American College of Surgeons it would seem that the Registry's classification should be the Esperanto of bone tumors.

To be sure many pathologists feel that the Registry's classification is inadequate. However, we have not as yet reached the point where our treatment facilities can follow the fine ramifications of pathological differentiation.

Under the Registry classification malignant tumors of bone are subdivided into (1) Osteogenic sarcoma, (2) Ewing's tumor, (3) Myeloma, (4) A group of unclassified and rare tumors such as angio endothelioma and extra periosteal sarcoma.

It must be recalled at this time that the line between benign and malignant tumors is not always sharply drawn. The velvety tufted osteochondromata particularly those occurring about the pelvis and the knee are notorious for their malignant tendencies and from time to time the constant benignity of giant cell tumors has been questioned. The frankly benign osteomata and exostoses rarely offer great difficulties. It would seem hardly necessary to rule out normal anatomical parts as masqueraders yet on one occasion some persuasion

was necessary to establish the difference between a bone tumor and a normal ischial spine.

The osteogenic group is the largest and most important in the classification. The tumors occurring in this group vary considerably in their cellular make up and consequently in their radiographic appearance. No other single step in classification has done more to simplify terminology than the establishment of this group. The multiplicity of descriptive terms previously used is at once encompassed by a single term.

The spindle cell osteolytic types must be differentiated from metastatic malignancy and in the lower end of the femur from giant cell tumor whereas the dense eburnating types may be confused with sclerosing inflammatory processes. These tumors arise singly principally in the region of the knee or shoulder although the pelvis, clavicle and jaw are not immune. In common with the other bone tumors their metastasis is mainly hematogenous though occasionally lymph node involvement occurs quite early.

These tumors are quite radioresistant. To be sure considerable decrease in size may follow heavy irradiation and films taken at a later date may show lessened growth activity and some sclerosis of the lesion. These changes are most marked in the bulky "sunburst" types and probably result from radiation action on the vascular supply with consequent disturbed nutrition in the growth.

That the basic cell element, the spindle cell, is quite resistant to radiation may frequently be demonstrated either in the recurrences at operative sites or in the lung fields.

The prognosis in this group is very grave, only a very few cases surviving.

At this time the chief hope of improving results and decreasing the high mortality in this group seems to lie in earlier diagnosis and the application of more vigorous radiological and surgical treatment. In this connection one is tempted to suggest a rule based on the familiar one regarding the healing of lesions of the lip. If pain in a fixed location known to be a possible site of bone tumor persists for two weeks a thorough x-ray examination should be performed and if nothing is found the examination be repeated every two weeks with the

same technique until an explanation is afforded.

Far too many early bone tumors are treated by massage, bakes or some of the numerous types of high frequency machines with consequent delay in the institution of proper therapy.

Ewing's tumor presents a somewhat more cheerful prospect if not from the standpoint of cure at least from the disappearance of tumor and symptoms for relatively long periods. Here again pain is the first symptom but in this condition the pain is often associated with fever and leukocytosis. Occurring as it does for the most part in the childhood and adolescent group, it may strongly simulate osteomyelitis. For this reason a diagnosis of osteomyelitis unconfirmed at the time of operation always demands a biopsy. This latter point cannot be emphasized too strongly. The chagrin of a mistaken diagnosis should never numb one to the point of forgetting to take a biopsy specimen.

The radiographic appearance of Ewing's tumor may be quite confusing.

The supposedly characteristic onion peel periosteal reaction may be similated by syphilis or recurrent subperiosteal extravasations of serum, blood or cells. In some instances the onion peel or laminated periosteal reaction may be entirely absent as illustrated in the following brief history.

In a young boy presenting fever, leukocytosis and bone pain in both shoulder and hip we had occasion to take serial roentgenograms over a period of several weeks. The first evidence of bone change in the shoulder was a localized mottling in the head of the humerus resembling widened vascular channels while in the hip the above changes were accompanied by slight periosteal elevation beneath the lesser trochanter. The clinical diagnosis during the observation period ran the gamut from rheumatic fever to osteomyelitis. A biopsy of the shoulder revealed a Ewing's tumor. Radiation treatment produced marked amelioration of the symptoms. This response to radiation gives support to the diagnosis of Ewing's tumor. Hence in the presence of a suspicious lesion we are justified in applying radiation as a therapeutic test.

Occasionally such tumors may not respond satisfactorily to radiation. The reason for this is not clear. An erroneous microscopical diagnosis may be the explanation. In flat bones Ewing's tumor produces a honeycombed appearance which may resemble a giant cell tumor or a hemangioma.

Two of these have been seen recently, one in the ilium, the other in the scapula. In both cases the radiation response gave strong confirmatory evidence which was later proved by biopsy. In our own experience the radiation effect on these tumors in flat bones is even more striking than that seen when the lesion attacks the long bones.

The myeloma group differs radically from the previous groups in age distribution. They occur for the most part in middle aged or elderly individuals. Occasionally the tumor arises singly and metastasizes to other bones. The flat bones are particularly apt to be involved. Most frequently the origin is multiple and the onset insidious so that, on first examination, widely disseminated, sharply demarcated punched out areas are found in the spine, ribs, skull, pelvis, etc. A slightly different form may produce a gradual demineralization of the spine which quite closely resembles the condition seen in hyper-parathyroidism. In such cases spontaneous compression fracture may be the incident which brings the patient to a doctor. The individual myelomatous lesions respond quite well to radiation. However, due to the insidious onset the condition is usually widely disseminated when the patients are first seen. Under such circumstances it is futile to attempt anything except the relief of localized pain. This may frequently be accomplished by the judicious application of radiation. Pulmonary and pleural metastases occur with striking frequency in the entire group of bone malignancies. This is particularly so in the osteogenic group.

Opinions as to the method of handling these present or potential metastatic foci are not at all concordant.

Several writers incline to the view that the lung fields should receive radiation from the onset whether metastases are present or not. That this is a logical position is unquestioned in the round cell radiosensitive types of growth,

for here we may destroy small foci which if allowed to grow could only be eliminated later at the risk of producing an overwhelming toxemia.

The more resistant cells of the osteogenic group present an entirely different problem. Several writers claim remarkable disappearances of metastases in this group. To my mind the accuracy of data in these cases is questionable.

In those rare early cases in which radical operation is hopefully performed radiation over uninvolvled lung fields may be of value. In later cases where there is every reason to expect lung metastases there is also every reason to expect involvement of other organs and irradiation over one localization such as the chest can be of little avail unless one subscribes to the "action at a distance" theory of radio therapeutics.

Babcock(3) feels that the value of prophylactic radiation of the lungs and other organs to prevent metastases has not been proved and may be harmful by reducing the resistance of the patient.

Certain it is that the fatal outcome of most of these patients is practically assured at the time they are first seen and in all but the round cell types the amount of radiation required to restrain the metastatic foci is very apt to increase rather than decrease the patient's discomfort.

(1). Moore, Sherwood—*American Journal of Surgery* Vol. XVII, No. 3 December, 1932. 403-416.

(2). Boyd, Williams—*Surgical Pathology* p 802, W. B. Saunders Company 1931.

(3). Babcock, Wayne, W.—*A Text Book of Surgery* p 249, W. B. Saunders Company 1928.

## THE UROLOGICAL ASSOCIATION OF SOUTH CAROLINA

Paul W. Sanders, Jr., M.D., Charleston, S. C.

### THE PROSTATE AS A FOCUS OF INFECTION

Clinical manifestation of disease due to remote causes, known as foci of infection, is nothing new to medical study today.

Chronic prostatitis, understood to be a chronic, pyogenic infection of one or more compartments of the prostate gland, may have its origin either from direct extention from the urethra or by its invasion through the blood stream. In this connection dental and tonsillar infection are responsible for many of them.

A history of gonorrhea should always be a lead for thorough examination of the prostate, for gonococci infections of the urethra no doubt are responsible for many cases of chronic prostatitis. However, bacteriological and careful clinical study constantly reveal the fact that these organisms are early and are usually supplanted by secondary invaders.

The secondary invaders and also the organisms presumed to have reached the prostate by

way of the blood stream are, according to Herrold's findings, in order of their frequency: staphylococcus albus, diphtheroids, streptococcus viridans, staphylococcus surens, hemolytic streptococcus and colon bacillus.

The inflammatory reaction within the prostate diminishes the calibre of the tubules and causes them to become distended beyond the obstruction with inflammatory debris. Connective tissue repair produces discrete scar tissue areas which when extended to fascial structure overlying the prostate, produces a peri-prostatitis whereby the distinct contour of the prostate is obscured. The inflammatory foci within the prostate tend to become encapsulated by scar tissue, which results in nodular formation often felt on rectal palpation.

Clinical entities of proved focal origin due to blood borne infection or blood borne toxins from prostatic infection may be cited as follows: arthritis, neuritis, ocular infections, secondary anemia, vasomotor skin diseases, erythema multiforms, backache, low abdominal

pain, functional gastric complaints and torticollis. The prostate may be the only contributing focus of infection or may be associated with other foci.

The "no history" referable to the prostate, or the "no complaint" referable to the prostate by the patient, does not exclude prostatic infection. It is not uncommon to find many silent infections unearthed at the time of a general check-up.

The casual rectal examination with no attempt to get prostatic secretion for microscopic study cannot exclude prostatic infection. Many mistakes are made by depending principally upon the palpating finger.

To properly examine the prostate it is necessary to palpate by rectum, gently strip or massage, collect the expressed secretion and examine microscopically. This should include wet and stained smears. At times, culture methods may be used to determine the causative organisms.

It has been repeatedly shown that the small, firm but smooth gland often harbors the most virulent infection, which can only be diagnosed by a study of the expressed fluid and culture.

From experience we have learned that more than one stripping may be necessary to reveal the products of infection microscopically. Where the history leads to prostatic infection repeated stripings at proper intervals should be made.

At times, such provocative measures as posterior dilatations and silver nitrate instillations will promote drainage and aid in making a diagnosis.

Routine urine examinations may or may not reveal pus cells. This is usually an expression of an associated posterior urethritis and does not reveal the extent of prostatic infection.

The management of chronic prostatitis obviously cannot be standardized for all cases but the intensity of treatment can be regulated according to the history of infection and the local pathology.

Early post-gonorrhreal infection demands very gentle and skillful massaging; the treatments being more frequent and less vigorous than most chronic infections, definitely associated with local fibrosis.

The most valuable procedure is proper application of digital massage at proper intervals. Too frequent or too vigorous manipulation is harmful both locally and generally. Gentle, systematic but thorough stripping need not be painful nor harmful, but therapeutically valuable by promoting drainage of infected foci as well as improving vascular response.

Subacute and early chronic cases may be massaged gently three times a week with benefit, while the more chronic fibrous glands show better response with less frequent treatment, once or twice a week.

Before stripping, I prefer to fill the bladder with potassium permanganate solution, 1-8000. This elevates the prostate to better advantage for stripping, and having the patient urinate immediately following the massage so that the urethra is cleansed of the expressed infectious material.

In the chronic infections, posterior urethral dilatations promote drainage and absorption and is a distinct help.

Careful observation of the pus content of expressed material demonstrates the impossibility of completely removing the pus cells from this material in many chronic cases, but improvement in this direction is most frequently gradual but noticeable as in also referred diseases where this infection is the sole contributing focus.

Constant treatment over an indefinite period is neither desirable nor necessary. It is best to give a series of twelve to sixteen treatments at proper intervals followed by a rest period of six to eight weeks.

One is frequently pleased to note that after these rest periods a marked decrease in pus cells in contrast to the last microscopic study.

Diathermy, electric prostatic heaters, hot rectal irrigations and hot sitz baths are, at times, beneficial adjuncts to treatment.

Autogenous vaccines, in selected cases, offer a definite value as an adjunct in managing these cases.

Other foci of infection should be looked for and removed if possible, for it is a known fact that in the presence of other foci of infection, especially dental and tonsillar, our efforts to cure the prostate may end in defeat.

## INTERNAL MEDICINE

J. H. Cannon, M. D., F. A. C. P., Charleston, S. C.

### ON THE VALUE OF THE ELECTRO-CARDIOGRAPH TO THE GENERAL PRACTITIONER

Because the electrocardiograph has only comparatively recently been introduced into medicine as an aid in the diagnosis and prognosis of heart disease, there exists uncertainty in the minds of those not having ready access to a machine as to just what its value may be. I have endeavored to summarize below, very briefly, some of the common conditions where one may expect help from a cardiographic tracing and mentioned others where we should not expect it to be an aid.

It should be stated in the beginning that it is a laboratory procedure and should always be correlated with the clinical findings, that it cannot take the place of a good history and physical examination, that a negative tracing does not "necessarily" mean that the heart may not be diseased, just as a negative sputum does not prove the absence of tuberculosis, or a negative Widal that the disease is definitely not Typhoid. On the other hand, positive findings even in the absence of symptoms or signs of heart disease may be relied upon with but very few exceptions.

In irregular heart action it may be depended upon to tell us the type of irregularity, which knowledge permits of more intelligent treatment. For instance, in some types of irregular heart Digitalis is definitely indicated, and in others it is contraindicated. Moreover, it is not always possible to diagnose accurately which type we are dealing with at the bed side, though the majority may be.

In Digitalis medication one is not rarely confronted with the question of whether the patient has had too much or if he needs more. While symptoms of too much Digitalis usually appear sufficiently early to prevent dangerous overdoses, they do not always do so. The cardiograph will indicate this before symptoms appear and may thus be of definite help.

In acute infectious diseases myocardial dam-

age which may have eluded a careful clinical study may be demonstrated with the machine or corroborate suggestive findings in such cases. This is particularly true in rheumatic fever and Diphtheria. The demonstration of a myocardial involvement may be an aid to diagnosis in an atypical case of rheumatic fever. In vascular disease involving the coronary arteries, it may make the diagnosis definite when the clinical findings are uncertain in some cases of coronary occlusion and confirm the diagnosis in others. Repeated tracings in such cases assist in making a more accurate prognosis. In a certain percentage of cases a certain type of curve has been found associated with Angina Pectoris.

In enlarged hearts its value is only in indicating which side of the heart is the larger. In valvular disease this may be of value in some cases as indicating which side of the heart is subjected to the greater strain thus pointing to the faulty valve.

In surgery its value is in helping to estimate the condition of the cardiovascular system as to whether or not the patient can stand an operation. It may be the deciding factor in the questionable case between a coronary occlusion and an upper abdominal lesion, a differentiation that clinically is at times extremely difficult.

Finally, it should be borne in mind that the cardiograph illustrates for us the location in the heart where the stimulus to contraction originates, the path it travels in the heart, and its distribution to the muscle; also the time it takes to travel from its origin to its destination.

If the stimulus arises in an abnormal location, varies in rate of production, is abnormal in number, is irregularly spaced, is interfered with in any one of several locations from reaching the ventricular muscle, if the ventricular rate is too fast or too slow; in the vast majority of instances the cardiograph will clear the fog, and upon correlating the tracing with the clinical findings, permit of a clearer con-

ception of the pathology and disturbed physiology and, therefore, a more intelligent handling of the case.

Instrumental means (cardiograph or polygraph) are the only ones at our disposal of investigating the conduction system of the heart. While the cardiograph is used in re-

search, it should be borne in mind by practitioners that it is of practical clinical value, and that it is not utilized clinically as much as it should be both for the benefit of the patient and the physician. Many men feel that a heart study is incomplete without a tracing.

## PUBLIC HEALTH

By B. F. WYMAN, M. D., Director of County Health Work, Columbia, S. C.

The hackneyed words of "leadership," "co-operation" and "coordination" have become such a part of almost every public utterance and the backbone of all written remarks that one hesitates to use them. For years we have been saying that the medical practitioners are in a strategic position to give the proper leadership, through cooperation and coordination in the field of preventive medicine, that by their dynamic action they take their rightful place in the vanguard of scientific medicine. But the truth is—we have not assumed our rightful strategic position on account of the lack of proper coordination and cooperation with the administration of preventive medicine. This statement is made with the knowledge that under the laws of the State of South Carolina the medical profession is directly in charge of the affairs of public health and are declared to be "the sole advisor of the State in all questions involving protection of public health within its limits." Being thus in this most peculiar position it behooves us to have more than a passing interest in affairs of health. No one would have the temerity to deny to the medical profession real scientific leadership through the side of scientific research and investigation. All literature is filled with the needs of these pioneers and investigators who, in many instances, have knowingly sacrificed their lives.

The public in its ceaseless quest for knowledge and the demand for the same is directly responsible for the fact that all newspapers, lay magazines—in fact all periodicals, have diligently and unceasingly stressed the so-called health movement. The public is demanding information about the prevention and cure of ill health. Many voluntary agencies through public subscriptions, endowments of foundations and charitable organizations are launching in this modern health movement. But it is seldom indeed that we find medical societies and associations actually participating in the movement to satisfy the public cry for information with reference to health. Within the more recent months the South Carolina Medical Association has published several unsigned articles dealing with scientific medicine. These articles have caused very favorable comment on the part of the laity.

Let us, therefore, as a devoted scientific group of organized medical men assume our rightful place as leaders in this modern health movement. Let us present in plain understandable diction the truth about the prevention and cure of disease. Let us make alive and real the hackneyed words of "leadership," "cooperation" and "coordination" as they apply to the whole field of medicine.

## OBSTETRICS AND GYNECOLOGY

R. E. SEIBELS, M. D., COLUMBIA, S. C.

At the suggestion of the Editor-in-Chief, instead of presenting new methods in Obstetrics this month, we are reviewing some of the old and tried ones which all of us may use with confidence.

*Puerperal Infection.* This can be prevented in the majority of cases and cured only occasionally. In 1796, Charles White of Liverpool demonstrated that cleanliness was the secret of its adequate prophylaxis and used chloride of lime to cleanse his hands and his instruments. After 50 years of practise he was able to say that he never had a case in his practise nor had lost one referred to him. There remain certain fundamentals in the science, certain landmarks of our craft: clipping the vulvar hair before delivery, infrequent vaginal examinations during labor—and these made only with the hand in a glove that has been recently boiled, keeping the bladder empty, no uterine nor vaginal douches, soap and water cleanliness of the patient and physician rather than relying on solutions of doubtful antiseptic value; these are old and tried methods to many but new and untried to some of us.

*Forceps.* Reduce the number of forcep deliveries in South Carolina during 1933 and we believe the infection, laceration, and infant mortality rate will be proportionately lowered. The late J. J. Watson frequently said, "The best case for the sharp uterine curet is the case it came in." The same is true of the axis-traction forceps; it is a museum specimen of only historic interest. We have been delivering babies since December 1912 and have never applied any form of axis-traction.

*Eclampsia.* The past 18 months has seen a sharp decline in the serious kidney complications of pregnancy. To a large extent the cases due to over-eating, underwork and over-play have been cared for by the lack of funds. Those cases remaining are largely recruited from the chronic nephritides whose kidneys have collapsed from the double strain of pregnancy, and from those developing during the course of the severe and acute infections. These are

largely preventable by frequent observation and care. Regular and repeated checking of the blood-pressure, and urinalysis—the heat test for albumin rather than the sink-test!—and frequent weighing are safe guides to the adequacy of the kidney function. A gain of more than 20 pounds from the normal weight of the patient during 9 months is usually due to edema: this is an axiom. The test is easily made and requires no expensive installation: even the small store at the cross-road has scales accurate enough for the purpose, and a gain of more than 2 1-2 pounds per month is the red flag of danger. "More is missed by not looking than not knowing" was one of Osler's aphorisms and applies particularly to eclampsia. The sudden onset of eclampsia, except in the advanced nephritic and during the progress of acute infection, is an obstetrical myth more often reported than seen. In examining the obstetric histories of 168 eclamptics seen by us, in only 2 were there convulsions without prodromal symptoms—one had a large "silent" renal calculous and the other developed in a case of influenza pneumonia. Eclampsia is a preventable disease and its appearance, like infection, is a reflection on the care of the attending physician.

*Septic Abortions.* They rarely follow uninduced abortions except those which have been subjected to unwarranted surgical interference. With increased economic pressure, more and more women will appeal to their physicians for the interruption of undesired pregnancy. The interruption of pregnancy remains a major surgical as well as a social and moral problem, and contains as many serious potentialities as an acute appendix.

*Obstetric Feces.* While thinking of our patients let us give a thought to ourselves. The patient has 8 months warning of the more or less happy event and gives considerable thought to the preparations: these vary from the custom of the poorer classes of notifying all the wise-women of the neighborhood to be on hand and to be a nuisance, to that of the wealthier

expectant's complete layette, bassinet, a special nurse, a carriage, a name—all completely provided for with the exception of the baby's shoes and the doctor's fee: the former by custom and the latter by practice may be provided only afterward. Whatever the fee to be paid it should be arranged for in advance: payments can be made at each visit and the largest part of it paid before the delivery: the remainder is easier to collect than the whole would have been the following Fall or Spring—which ever were further away. What of the patient who doesn't call the physician until labor has commenced? Arrange for the fee while we wait for the cervix to dilate: the

husband is seldom having such hard labor pains that he can't talk business. The good collector often has the best practise in the community.

The representative of a weekly magazine of low price and large circulation told recently of having collected \$3,000, in the counties of Richland, Lexington and Calhoun during December and January past for subscriptions past due. This is probably ten times the amount collected by physicians of these counties for overdue payments on the baby. This was all paid in chickens, eggs and butter which the collector had arranged to dispose of at the nearest market at the prevailing prices.

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## NEWS ITEM

The Journal desires to correspond with a young Eye, Ear, Nose and Throat Specialist who would be interested in a first class location. A South Carolinian preferred.



## MEETING THE PROBLEM OF MALNUTRITION

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# The Journal of the South Carolina Medical Association

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# Do NORMAL ADULTS REQUIRE VITAMIN D?



"THE QUESTION is now being frequently asked of me whether adults should take a source of vitamin D as a safeguard to physiologic well-being. The only answer in the light of the available evidence is that there is little room for doubt that an additional source of the vitamin, especially during the colder months of the year, affords a safeguard to health."

—E. V. McCollum, *International Clinics*, June, 1932

IT must be borne in mind that throughout life the skeletal tissues are subject to absorption and apposition. To quote Marriott, "Teeth and bones are not fixed, inert supporting tissues, like the structural iron of a skyscraper, but very live body tissues which can be maintained properly only when the nutritional needs are adequately met." These needs are an adequate supply of calcium, phosphorus, and vitamin D. Viosterol is capable of controlling calcium-phosphorus utilization in adults in such conditions as tuberculosis, osteomalacia, postoperative tetany, osteoporosis,

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## OF THE

# South Carolina Medical Association

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### EDITORIAL

DR. WILLIAM EGLESTON PRESIDENT ELECT OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

The elevation of Dr. William Egleston of Hartsville to be President Elect of the Association comes as a well deserved honor to one who has modestly but effectively served the best interests of organized medicine in South Carolina from the very beginning of his membership in the Association.

Early in his professional career Dr. Egleston became a profound student of preventive medicine, particularly with reference to malaria. He also showed a keen interest in organized medicine and filled practically all of the offices with the gift of the profession in his section of the state. During his entire professional career he carried on a large general practice and found the time to devote considerable attention to civic and religious organizations.

A significant recognition of Dr. Egleston's wide knowledge of public health came to him

by his election to membership on the Executive Committee of the State Board of Health in 1910 following the death of Dr. James Evans of Florence.

Perhaps Dr. Egleston is best known throughout the State for his enthusiastic activities as a member of the State Board of Health. This was clearly demonstrated when he was elected to the Chairmanship upon the resignation of Dr. Robert Wilson in 1931.

Dr. Egleston was born September 2, 1873 at Winnsboro, South Carolina. He was educated at the old Mt. Zion Academy there and at the University of the South, Sewanee, Tennessee. He was graduated in medicine from the Medical Department University of Nashville, Tenn. in 1898. In 1900 he married Annie Bonham Aldrich of Barnwell, South Carolina and has practiced medicine since 1900 at Hartsville.

As has been said of President Abell, the President Elect has given serious thought to medical economics and by virtue of his experience as a business man he too will bring to

the Association a type of leadership most sorely needed at this time. Dr. Egleston hopes to visit the constituent societies throughout the State while he is President Elect.

---

DR. ROBERT E. ABELL PRESIDENT OF  
THE SOUTH CAROLINA MEDICAL  
ASSOCIATION

The Association is fortunate in having a leader this year who will measure up to the expectations of his numerous friends.

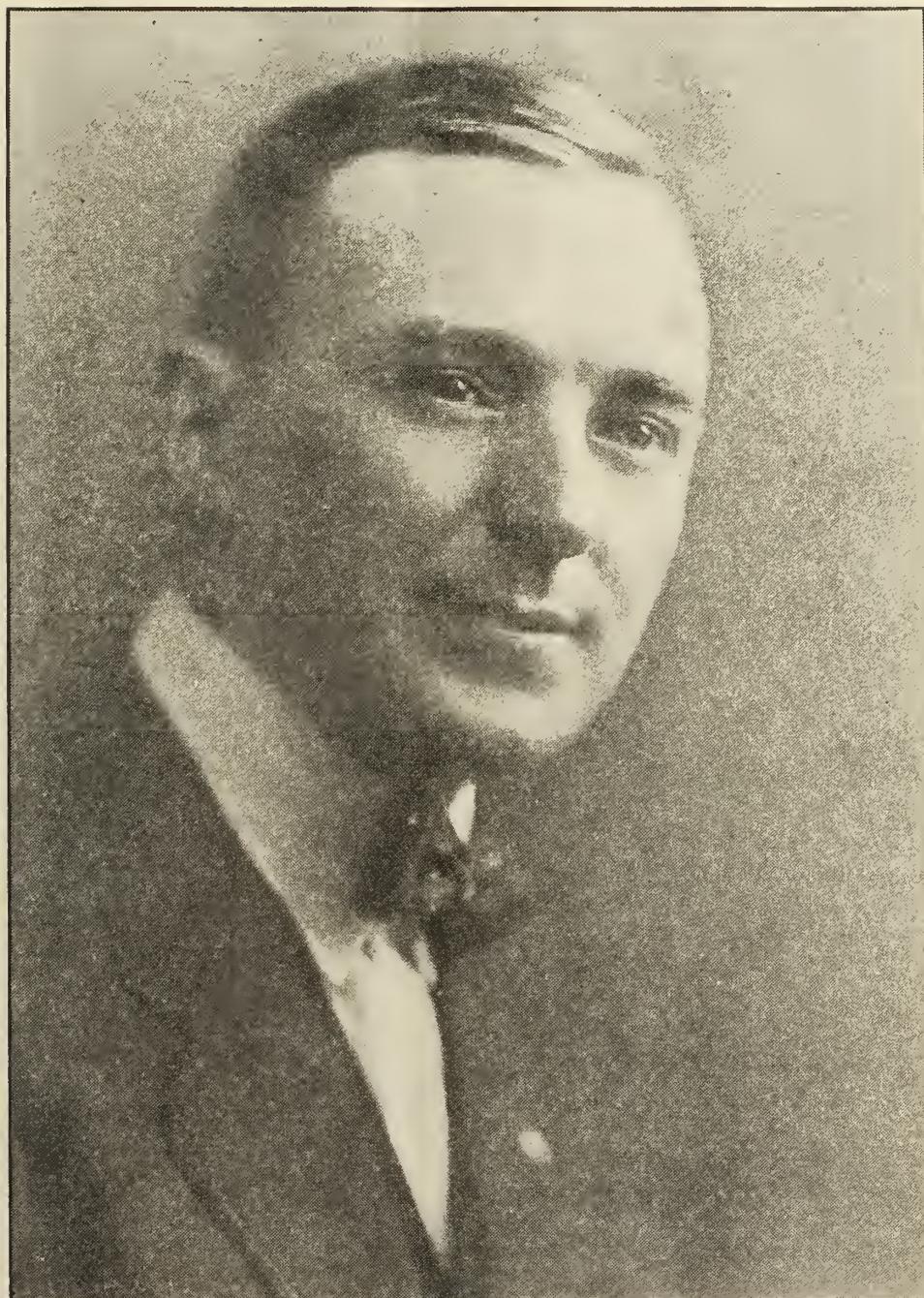
Dr. Abell was born at Lowrys, S. C., October 12, 1887 the son of Joshua Leland and Sophia Erwin Abell. He attended the high school at Lowrys and for one year was a student at the Presbyterian College of South Carolina at Clinton and subsequently two years at Davidson College, North Carolina. He attended the University of Maryland Medical School and graduated from that institution in 1912. Following his graduation he was resident surgeon for three years 1912-1915 of the University Hospital, Baltimore, Maryland. Dr. Abell returned to his native state and located at Chester, South Carolina for the practice of surgery. He was instrumental with others in establishing the Chester Sanatorium, which for a number of years rendered a creditable service, later leasing the Pryor Hospital. Dr. Abell has continued as the chief surgeon of latter institution to the present time. Dr. Abell has served a number of years as a member of the State Board of Medical Examiners, resigning his commission in that body when he as-

sumed the Presidency of the South Carolina Medical Association at Spartanburg in April. Dr. Abell has been a loyal member of the Sea Board Railroad Surgeons Association. He entered the Medical Corps of the United States Army as First Lieutenant in June 1918 and went to France with Evacuation Hospital No. 26. He was promoted to a Captaincy in October 1919 and was honorably discharged February 1, 1919 from service. Dr. Abell is a Fellow of the American College of Surgeons. He has been connected with the numerous civic and business organizations in his home community. It is particularly along medical economic lines that our new President will bring to the Association wise counsel and definite guidance. There never has been a time in the history of the South Carolina Medical Association when such leadership was so much in demand.

President Abell by virtue of his close contact with medical education while a member of the State Board of Medical Examiners has shown an abiding interest in the welfare of the Medical College of the State of South Carolina.

Dr. Abell has a delightful home life. He was married to Alice Hall Glenn of Chester, S. C., October 12, 1916. There are three children, Robert Ephraim, Sophie Erwin and Thomas Glenn.

Dr. Abell during his term of office as President Elect has visited the various sections of the State and will continue to accept invitations from constituent medical societies for future visits in the interest of the Association.



Dr. Robert E. Abell, President South Carolina Medical Association, 1933.

## PRESIDENT'S ADDRESS

### \*A BIOGRAPHICAL SKETCH

By J. R. Young, M.D., Anderson, S. C.

Analysis of the addresses delivered by successive Presidents of the South Carolina Medical Association for the past thirty years reveals that some phase of Public Health has been the theme most frequently chosen for discussion on this occasion. This is as it should be and reflects the feeling of responsibility which has been felt by those upon whom has been placed the signal honor of directing the affairs of this Association. Under the laws of our State, the members of this Association constitute the State Board of Health and upon them has been placed the responsibility of promoting the health of our citizens. The duty that devolves upon us by virtue of this responsibility of educating the public in matters pertaining to health preservation and disease prevention has been ably presented by many former Presidents.

That this work may be carried on in an increasingly effective way, other equally able men have impressed upon us the necessity of raising the standard and broadening the scope of our own education. Still others have stressed the importance of maintaining a compact organization in order that we may better discharge this sacred trust. Only one of these addresses in the past thirty years has dealt chiefly with Medical Economics. This analysis discloses facts that are in full accord with the recent report of the commission on Medical Education. As you will recall, this commission set up in 1925 and sponsored by the Association of Medical Colleges was made up of prominent medical educators, physicians and laymen. They conducted a five year study and a few months ago released their report. "They found that in the United States the most important problem is in having a uniform high quality of medical service everywhere available and not the better distribution of cost of medical care. They found the doctors more concerned in medicine than they are in economics:

more concerned in making people well than in finding out who is going to pay for the work. Quality of medical care and not quality of finances is the doctor's plea for the people." While all of us know that these findings are not one hundred per cent true in our State nor in any other State, we are constrained to believe that they reflect the thought of a healthy majority of the members of our profession. To continue with our analysis, while several of these addresses have included interesting historical data, only two have been distinctively in the realm of medical history and none have been of a biographical nature.

In presenting for your consideration a biographical sketch of the late Dr. W. H. Nardin of Anderson, I am not activated by the idea of novelty nor do I claim to possess the skill that such a task deserves. I shall use the method of a surgical operation and attempt to dissect from the largely, unwritten records of his life those traits and graces by which in the after-glow he is held in the esteem of our community. As the surgeon puts on sterile gloves so that his hands, which are at best only relatively clean, may not introduce any hazard to healing, so I now invest myself with the official robe of office so that what I may say will not offend or appear presumptuous. I have chosen this theme for the following reasons:

(1) "To a long interest in biography as a recreation, I have added a strong conviction of its value in education." (Osler).

(2) In the archives of our profession, there should be a niche for the outstanding men of each generation. Dr. Nardin was among that number in the generation just passed. "The greater number of that generation must be content to be as though they had not been: to be found in the register of God, not in the record of man. The iniquity of oblivion blindly scattereth her poppy and deals with the memory of man without distinction to merit of perpetuity." (Sir Thomas Browne).

(3) As the dissection progresses, I shall hold up for our appraisal certain traits of character

\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 19, 1933.

worthy of our emulation with the hope that each of us by a process of spiritual clairvoyance may synthetize that ideal physician which deep in our subconscious minds each of us hopes to be. For just in the proportion that we keep this ideal pattern in mind and make progress in molding our lives in likeness to our several patterns, will we be worthy to retain the confidence and esteem of our people? The advice that Dr. Oliver Wendel Holmes gave doctors sixty years ago is still pertinent. He said that the best short rule for one to follow in obtaining the confidence of one's community was *to deserve it.* A sober realization of this truth and a uniform, consistent and persistent effort on the part of the profession of our day to be increasingly worthy of the confidence of our people is the best answer that we can make to the implied and expressed criticisms contained in the report of the committee on "The Cost of Medical Care."

Probably some of these criticisms need not be taken too seriously because there is certainly nothing new about them. For instance, concerning the criticism of commercialism in our profession—Osler in one of his delightful essays says: "In every age there have been Elijahs ready to give up in despair at the progress of commercialism in the profession." Then he quotes Garth, a seventeenth century English physician, as saying in 1699: "How sickening Physic hangs her pensive head; for what was once a science now's a trade." Today the cry is louder than ever but we can still say to these Elijahs that there are many more than seven thousand who have not bowed the knee to this Baal." To the major criticism contained in this elaborate report, namely: that the average private citizen cannot for a fee which he can afford to pay go to the average private physician, his family doctor, and get the service which his case merits but should rather go to an elaborately organized tax-supported or insurance controlled medical center and there secure this service somewhat in the same fashion that he buys his groceries—to this criticism, I say, we would make the answer that Nehemiah made to Sanballat and Tobiah—jealous, self appointed reformers of that far off day—when they sent unto him saying: "Come, let's meet together in someone of the villages of the

plane of Ono." He replied: "I am doing a great work so that I cannot come down; why should the work cease whilst I leave it and come down to you."

Dr. Waller Hunn Nardin was born in Charleston October 24, 1837. His father was Dr. David Fredric Nardin, a native of France and his mother was Elenor St. Clair Waller whose father, William Waller, was a native of Durham, England. Dr. David Fredric Nardin only lived in Charleston a few years, coming there from Nashville but he built up quite a reputation. He introduced the Thompsonian practice of medicine there and by his staunch and able leadership gave it considerable vogue. He found time to edit a journal on Botany. When the yellow fever epidemic of 1838 struck Charleston, Dr. Fredric Nardin sent his wife and son to Pendleton District and he remained to help in the fight against yellow fever. He contracted the fever himself and died and is buried in St. Michael's Cemetery in Charleston. His widow remained in the up-country and later married Daniel Brown of Anderson who became the step-father of her young son, Waller Nardin. There grew up a very strong attachment between the step-father and son. In later life, Dr. Nardin stated that any success he may have attained was due in considerable measure to his step-father. When Mr. Brown died, it was found ordered in his will that Waller Nardin share a like in his estate with his own children.

Young Nardin received the usual classical education of his day and in 1859 when 21 years of age, began the study of medicine in the University of Virginia. He took one course of lectures there and in the fall of 1859 he entered the University of the city of New York where he graduated in March 1860. After his return to Anderson, he at once began to practice in partnership with his step-brother, the late Dr. B. F. Brown. The same year he married Miss Lucy Hammond of Dalton, Georgia. The following year the Civil War broke out and Dr. Nardin soon volunteered for service. Upon the recommendation of the late Colonel James L. Orr, he was not accepted for service as a private soldier but was advised that he would soon be needed as a doctor. A few months later he again volunteered. At this time he

was detailed to handle a severe epidemic of small pox which had broken out in the Fork. The Fork is that area of Anderson and Oconee County situated between the Seneca and Tug-aloo Rivers where they converge to form the Savannah River and contains the village of Townville, at that time a thriving country village. Dr. Nardin remained here for a few months, handling alone a severe epidemic of small pox, which had started from cases of small pox in soldiers home on furlough. He vaccinated himself with a scab from a case and while he was treating many patients, some with fatal small pox, he himself had Varioloid.

After this service was completed, he was made an assistant surgeon in the Confederate Army and after a short service in the Confederate Hospital at Columbia, he was transferred to the Western Army and served as surgeon to the sixty-fifth Georgia Regiment and later as surgeon in Caper's Brigade. He surrendered under General Joseph E. Johnson in April 1865. His uniform, a gray mare and a Mexican silver dollar, constituted his belongings when he returned to Anderson. This silver dollar is still in the possession of the family and to them it is more than a souvenir.

It has been a reminder of the courage and fortitude with which this brave soldier set about building up a practice and making a livelihood for his young wife and two daughters. For the next eight years, he engaged in a general mercantile business with his step-father in addition to carrying on his medical practice but in 1873, he retired from this firm and from then until the time of his death in 1908, he devoted his undivided attention to the practice of medicine. I knew Dr. Nardin personally for only two years, having located in Anderson in 1906. During this time he was doing an office and consultation practice. He wore with dignity the crown of age. His face and manner showed force, intellect, kindness, and poise. To me he was the embodiment of that which I wished to become.

How he had gained eminence in the profession: how he had been able to fill such an important place in the civic, business, and religious life of the community I did not know. But these secrets are revealed in part by a study of some of his writings. Notable among

these is the Presidential address which Dr. Nardin delivered at Sumter just forty years ago today on the occasion of the forty-third annual meeting of the South Carolina Medical Association upon the subject "The Duties and Responsibilities of the Medical Profession." In this address he states: "Medicine is a jealous master and requires our undivided time and talent, not being satisfied with half-hearted service." Again: "Duty is very often a hard and exacting master and no profession renders so ready a response to its demands as does ours. Forgetting self and ignoring bodily comforts we hasten to answer the call for help, regarding neither the winter storms nor the summer suns. We avoid not contagious and infectious diseases and even go to distant towns to help stay the ravages of severe epidemics, as some now present have done." (He himself had gone to another village to help in an epidemic of small pox.) "Some have quit home and its comforts to dwell among the afflicted and how often do we hear of the physician contracting a fatal disease from his patients." (His father had died of yellow fever while engaged in such service.)

The first ingredient then which we recover from his formula of success was a high regard for and a consistent obedience to the call of duty. This subtle tissue of the soul may not be demonstrated on dissection. It probably resides in the very blood plasma inherited from sturdy forebears. We have an idea if this blood had been typed, it would have been found to be type four. Would a transfusion of such blood into the circulation of the profession of our day be helpful?

Another quality that contributed to Dr. Nardin's success was his habit of study. To quote again from his Presidential address: "When the toils of the day are over and night finds him without an urgent call, the doctor should be found poring over book or magazine endeavoring to store his mind for better work on the morrow." Dr. Nardin early began the habit of regular study and few doctors of that day possessed such a complete medical library. He studied both books and patients. He believed the dictum of Osler who said that to study disease from the patient alone was like going to sea without a compass but to study disease

from books alone was like not going to sea at all but merely playing in the shallows.

Among Dr. Nardin's medical papers were several clinical papers upon patients having stone in the bladder. He did quite a number of operations for this condition. One of the most interesting of which was the removal of a rather large calculus, the center of which contained a minieball which had entered the body of an old confederate soldier twenty-five years before the operation. This patient made a good recovery.

Another very interesting case of this nature was reported by him fifty-five years ago at the meeting of this Association in Greenville. This was the case of a negro man from whom he had successfully removed by the perineal route a calculus weighing eight ounces. This patient had not unnaturally developed a rectal fistula following the forcep delivery of this stone but the fistula had healed and the patient had relief of all symptoms and voided normally. This interesting case report made by Dr. Nardin in 1878 is buried away in the transactions of the South Carolina Medical Association, for Medical Journals were few in that day. He wrote from the standpoint of duty and loyalty to those who were to come after him. How different it is today! Dozens of Medical Journals stand willing to publish worth-while medical articles, and those who write are assured of a wide audience.

While Dr. Nardin was a close student and had a high regard for medical authorities, he had strong convictions of his own and did not hesitate to differ with teachers of national reputation. This was brought out in one of his papers in which he takes issue with the advice given by the late E. P. Davis upon the advisability of giving a patient who is having a long tedious labor frequent antiseptic vaginal douches. Dr. Nardin of course advocated the aseptic and antiseptic technique in conducting labor but he stated that any method which repeatedly washed away the vaginal secretions which nature provided to lubricate and protect the parts was "meddlesome mid-wifrey." Present day obstetrical authorities would commend his judgment.

Dr. Nardin's success in practice and the eminence he attained in the profession in our State

were by him attributed in part to benefits he derived from organized medicine. He said: "This State Association is a school in which we are brought together from all parts of the State to exchange advice upon medical subjects that new truths may be learned, doubts expelled and duty made plain." He gives this testimony—"I look back upon the meetings of the State Medical Association that I have attended as among the pleasantest days of my life in the knowledge gained and acquaintances renewed. I never return home without being more in love with my profession and feeling that its duties are less burdensome." He emphasized the fact that the highest purpose of this organization is to promote the education of the doctor so that he may give better and more skillful treatment to his patients. To this end he makes a plea for short practical papers, saying: "It is better to be able to set a fractured arm well or treat a bad cold skillfully than to spend all one's time preparing to perform a Laparotomy that may never come one's way."

It is not surprising that to one who was so in love with the profession as to be a regular attendant at the State meetings there should come many honors during the years. But few men have had all the honors which this Association can bestow placed upon them. Dr. Nardin served as a member of the State Board of Health; as a member of the State Board of Medical examiners; as delegate to the American Medical Association; as President of his County Medical Society; and as Vice-President and later as President of this State Medical Association. During the 70's and 80's and 90's, his name is to be regularly found on important committees of this Association. The position of Superintendent of the State Hospital at Columbia was offered him by Governor Tillman, not because of his political affiliation but because Governor Tillman considered him a capable, conservative physician who held the esteem and confidence of the medical profession. This offer was not accepted. Decision to reject this offer was reached after consultation with the late Mrs. Nardin.

This was a happy decision for Anderson and for fifteen more years he remained a prominent figure in our community life, for besides

being a prominent doctor, he was a leader in other fields of community activity. He was the last intendant and the first Mayor of the city of Anderson. He was for years a member of the Board of school trustees. He was a stock-holder and director in our first bank, cotton mill and oil mill. In fact, all the numerous enterprises which a growing town undertakes, received his hearty endorsement and support. Notable among these was the support of the plan to build a County Hospital. While this plan was not begun by him, he was very active in supporting it. He subscribed liberally and in addition, gave much time and wise counsel as a member of the building committee. He was a member of the first staff and along with the late Dr. Samuel M. Orr, his former pupil and partner, worked out a happy balance between lay management and professional activity that is still in operation and that has been found entirely workable. To their wise foresight may be attributed the fact that no serious friction has ever arisen in this Hospital between the lay management and the staff.

While it was not the privilege of either of these men to do much active work in the Hospital, they both had the keen pleasure of seeing it off to a good start. It is very appropriate that for the past twenty years there has hung over the President's desk at the Anderson County Hospital enlarged pictures of these eminent physicians who indeed "builded better than they knew." Soon after the death of Dr. Nardin in 1908 his children, upon the suggestion of Dr. W. H. Nardin, Jr., gave to the Hospital the valuable library of their father. They also equipped a Clinical Laboratory in his memory. Needless to say, these very practical memorials have perpetuated his beneficent influence on this institution.

However, the institution in our community to which Dr. Nardin rendered the longest, most loyal and most devoted service was St. John's Methodist Church. He joined this church, the church of his wife's faith, at the same time that his oldest daughter joined. (He had been reared in the Episcopal Church). In it he found suitable expression for his religious bent. For many years he was chairman of the board of Trustees of this congregation and in 1886 and again in 1908 acted as chairman

of the building committee when new churches were being erected.

His deeply religious nature is shown in his Presidential address from which we have quoted so freely. He says: "Let me call your attention to the duty of following the example and teachings of the "Good Physician" whose life was spent in large part by healing the sick, etc. As our calling places us in this same situation, we should walk in his footsteps." Again: "Did you ever seriously think upon the comfort that a word fitly spoken may bring to a patient? Is it not a duty we owe our patients to be able and willing to administer spiritual consolation? Someone may say that this would be assuming the duties of the priest. Excuse me if I say that the two professions are so alike that he who is nearest both is best."

That Dr. Nardin practiced what he was here preaching is borne out by the statement of one in this audience who states that the first time he ever saw Dr. Nardin was as he sat by the bedside of a dying brother physician repeating for him these lines: "Though I walk through the valley of the shadow of death, I will fear no evil." And his religious beliefs would on occasion cause him to rebuke scoffers and profaners. On one occasion he was called in the country to render service to a man who had received a fractured femur while drunk. He was in the loquacious stage of drunkenness and was flavoring all his remarks with foul profanity. After ineffectually remonstrating with him for a while, Dr. Nardin advised him that he would immediately go back to town and leave his fracture untreated unless the profanity was stopped, whereupon the seven devils of profanity came out of him and he became as meek and docile as a weaned child.

Probably the religious bent of Dr. Nardin's nature and his spiritual metabolism of his beliefs into his daily work and conversation accounted in part for the success of his sick-room technique or bedside manner. He inspired confidence in his patients, not alone on account of his knowledge of disease but also on account of the dignity, poise, and peace that emanated from him. Indeed "The verra look o him wes victory." What other quality is so essential in the sick-room where the slightest appearance of irresolution or doubt on the part

of the doctor is sure to be noted by the keen eyes of the patient. Fear is the symptom most common to disease, and the highest accomplishment that a physician may make is to be able to cast out fear. What better antedote for fear has been found than that ascribed by Osler to Sir Thomas Browne of whom he said: "He mingled the water of science with the oil of faith." While water and oil may not mix in a test tube in the subtle alchemy of the soul, the icy weight of fear is easily transmuted into buoyant hope by the radiating warmth of faith.

Is not such faith a natural quality for a doctor? Sir Thomas Browne in his *Religio Medicus* says: "If Galen called his heathen readers to admire the power, the wisdom, the providence, the goodness of the Framer of the animal body—surely we who have inherited the accumulated wisdom of two thousand years since the time of this Greek physician may well lift up our thoughts from the works we study to their great Artificer." To Dr. Nardin the possession and exhibition of such faith was quite natural and added much in gentleness and sympathy to his kindly ministries. His sick-room technique might be labeled "priestly" and in his hands was quite effective. He was perhaps lacking in ability to successfully use that other and more common technique which might be called humane. The doctor who by a sincere interest in his fellow men in general and his patients in particular is able to convince them of his genuine, unalloyed interest in their well being and recovery, inspires a confidence in his patients. He does this by his approach as a brother and the same color or flavor of interest is present whether the patient live in hut or palace. To many people this brother attitude is more convincing and impelling than that of the priest. They are both entirely foreign to that counterfeit method which we occasionally see and may refer to as that of the magician. This wonder-working doctor attempts to impress his patients by ostentatious display of elaborate equipment and the performing of numerous complicated clinical tests. He attempts to hypnotize the patient or to in-

voke such awe and admiration for himself that he will be able to control the patient or victim. Such bombastic legerdemain often is quite effective for a time and then the glamor wears off and the idol is found to have feet of clay.

Other techniques no doubt have been used but only these two—that of the priest and that of the brother—have stood the test of time. An illustrious exponent of the former, in a different type of service, was Woodrow Wilson and of the latter, Franklin Delano Roosevelt. All of us, no doubt, know doctors who happily combine these two effective methods. The doctor of the last generation who excelled in this happy ability was Sir William Osler. Perhaps no doctor of worldwide fame has ever excelled him in this respect. As suggested by Dr. Nardin, the physician of Galilee illustrated in his practice a perfect blending of these two faith inspiring methods. And it was this perfect example which Dr. Nardin attempted to imitate.

And when his own summons came, it doubtless enabled him "with unfaltering trust to wrap the draperies of his own couch about him and lie down to peaceful sleep." He had the good fortune to escape what DaCosta calls the "appaling affliction of chronic death" and to meet a "gentleman's death" from cerebral hemorrhage.

And now that the tale is told, may not each of us catch a new and deeper realization of the possibilities that are in the reach of the family doctor. Does this life sketch not teach us that a very satisfying and worth-while sort of life may be led in a simple unassuming way? In spite of changing times, is it not true that there is now and always will be a place for every such general practitioner? Is not the family doctor a permanent figure in our national life?

That the medical profession may preserve its position of independent supremacy in health matters, is it not incumbent upon us to see that all our citizens have available competent general practitioners worthy of that gracious and romantic title of "family doctor?"

## ORIGINAL ARTICLES

### \*SOME MODERN METHODS IN THE CONTROL AND TREATMENT OF TUBERCULOSIS

By P. P. McCain, M. D., (*invited guest*), Superintendent and Medical Director, *The North Carolina Sanatorium for the Treatment of Tuberculosis, Sanatorium, N. C.*

Mr. President and Fellow Practitioners of my native State, I always welcome the opportunity to get back home and I appreciate very deeply the honor of being invited to present a paper at this annual meeting of your society.

My subject is so broad that I will attempt only to discuss a few phases of it which are of practical importance to practicing physicians.

The splendid progress which has been made in the fight against tuberculosis during the last two decades makes us hope that in the not far distant future, perhaps in our generation, tuberculosis may really be reduced to one of the minor causes of death.

For such a hope to be realized it will be necessary for the whole medical fraternity to join heartily in fighting this universal foe of civilized man, which has for millenniums been successfully defying our profession. The fight cannot be won by the specialists and public health authorities alone. The issue depends very largely on the private physician and on the extent to which he will join in the attack.

#### CONTROL

For tuberculosis to be brought under control it is essential for the disease to be discovered before it becomes contagious and in time for it to be cured. Most moderately advanced and practically all far advanced cases have positive sputum; many such cases can be benefited by treatment, but exceedingly few are ever cured. Only the early stage cases are generally curable and non contagious.

In spite of all the efforts of recent years, only a small proportion of cases are even yet discovered early. Most patients apply for ad-

mission to sanatoria soon after the diagnosis is made. In 1931 an analysis of the replies received to a questionnaire on the stage of disease on admission which I sent to all the sanatoria in the thirteen Southern States showed that of 9,785 patients admitted during the previous two years only 12% were early stage or minimal, while 42% were moderately advanced and 46% were far advanced. This condition of affairs is not peculiar to the South. Practically the same percentages obtain for the admissions in the various sanatoria throughout the country. Even when allowance is made for those who don't apply to a sanatorium as soon as the disease is discovered and for those whose disease progresses while they are waiting for admission, this means that at least 75% or more of all cases of tuberculosis are not discovered until they are past the curable stage and until they have probably infected the other members of their household.

Our failure to discover tuberculosis is due largely to two causes: first, the limiting of our search to those who have active symptoms or who are sick enough to consult us; and second, the limiting of our study to the time honored methods of history taking, physical examination, and sputanalysis.

Most patients with early stage tuberculosis and quite a number with moderately advanced disease have no very suspicious symptoms and many feel perfectly well. The onset of tuberculosis is usually so mild and insidious that it is rarely discovered even in doctors themselves until it has passed the early stage. Of 39 practicing physicians diagnosed at our institution as having tuberculosis, 23% were in the early stage, 46% were moderately advanced and 31% were far advanced. If physicians do not usually recognize early tuberculosis when they are attacked themselves, it is apparent that the disease has no early earmarks which would usually make a layman feel sufficiently alarmed to take him to a physician.

Even when definite disease is present there are frequently also no definitely abnormal phy-

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sical signs. The stethoscope is a valuable instrument, but it will not infrequently fail, even in the hands of experts, to reveal the presence of underlying tuberculosis in the chest. Dr. Lawrason Brown(1) reports that of 1900 consecutive admissions to Trudeau Sanatorium diagnosed as having tuberculosis between 1920 and 1927, 503, or 26% either had no abnormal physical signs or insufficient signs for a definite diagnosis of tuberculosis. Of this number 159 were classified as minimal, 322 as moderately advanced, and 22 as far advanced.

We should, of course, also make repeated examinations of the sputum when possible to obtain specimens, but most early stage cases do not expectorate and the sputum of those who do is nearly always negative.

If therefore we expect to find tuberculosis early we must search for it in those who are apparently well and we must employ additional procedures to those commonly in use.

The apparently healthy group which are most likely to have the disease are the contacts, those who have lived in the home with positive sputum cases. But our search will be fruitful in any large group of apparently healthy people. It is especially important to study groups of young people who are thrown together over long periods of time, such as children and teachers in schools, students in colleges and workers in industrial plants. In every large group of apparently healthy people many cases of previously undiscovered early tuberculosis can be found and not infrequently a few unrecognized cases in the more advanced stage who are a source of danger to the others. By extending the study to the homes of those who give strongly positive reactions and of those who are found to have tuberculosis, many previously undiscovered cases of chronic advanced tuberculosis will be found. Such cases are often the most dangerous disseminators of infection because their range of contact is wider and, not being conscious of the nature of their trouble, they take no precautions against its spread.

The additional procedures which we need to use in our search for tuberculosis are mainly two, the tuberculin test and the X-ray.

A negative tuberculin test not only rules out tuberculosis, but also tuberculous infection. A

positive test shows tuberculous infection, and probably indicates somewhere in the body the presence of live tubercle bacilli. But it does not necessarily indicate tuberculosis. The test is so harmless, it is so easily administered, the result is so easy to interpret, and the information it gives is of such value that there is no reason why it should not be in common use by every practicing physician. It used to be thought that so nearly all adults would give a positive reaction that the test was useless except in young children. This is not true of the country at large and it is certainly not true in the South. During the last six years the Extension Department of the North Carolina Sanatorium has given the intracutaneous tuberculin test to 122,000 school children including those of high school age, and only 16% gave positive reactions. It is my belief that if the whole population of the Carolinas were tested, not more than 25% would give positive reactions. Since, therefore, this simple test will rule out tuberculosis in a good proportion of our suspects, it is most worth while. A positive reaction is also exceedingly valuable because it usually makes even the apparently healthy individual more willing to go to the expense and trouble of a further study.

Either the intracutaneous or the cutaneous (von Pirquet) method may be used. The former is more sensitive and accurate, but a negative reaction with either method will practically always rule out the possibility of clinical tuberculosis except during a few weeks following some of the other acute diseases and in terminal cases of tuberculosis. Tuberculin is also very inexpensive and can be obtained from the commercial biological laboratories ready for administration and with full instructions for its use and interpretation. Many state and county health departments and some tuberculosis associations will furnish it free of charge.

The X-ray has replaced the stethoscope as our most valuable instrument of precision in pulmonary tuberculosis. Childhood type lesions can practically never, incipient adult type lesions can rarely, and moderately advanced lesions can often be demonstrated only by the X-ray. Properly taken and correctly interpreted X-ray films are our most valuable means of diagnosing early lesions and of determining

the extent and of following the progress of all tuberculous lesions. We cannot be sure that any individual with a positive tuberculin test does not have tuberculosis until he has had X-ray films made. The general use of the tuberculin test and of the X-ray by practicing physicians would mark a wonderful advance in the control of this dread disease. The main difficulty about having X-rays made at present is the expense. The reason is because so few are made. If all those who need X-rays of their chests and are able to pay for them should have them made, roentgenologists could make them profitably at a fraction of their present charge.

Before we can appreciate the value of these more modern methods of discovering tuberculosis we must have a modern conception of the whole story of tuberculosis. We usually think of it as a disease causing cough expectoration, hemorrhages, night sweats and emaciation. This is the closing chapter of the story, picturing the tragic ending—tragic for the patient himself and often tragic also for the loved ones and friends to whom he has passed on the germs of his disease. But let us think also of the other chapters in the story: of the first chapter when the only evidence is a positive tuberculin test and where the story should always end; of the second chapter when the childhood type of earliest demonstrable lesion appears and when with proper care a cure can practically always be effected; of the third chapter, when minimal adult type disease has developed and when even yet the patient has a good chance to be cured before he infects the other members of his family; of the fourth or moderately advanced chapter, when the disease is becoming communicable to others, beyond the curable stage and when it will require much time and a great deal of money to get it under control; and of the fifth or final chapter when the victim either succumbs to the disease or is doomed to a life of invalidism and is often haunted by the thought that he had already infected those most dear to him before he found out the nature of his malady.

With such a picture of the whole story of tuberculosis before us, it is easy to see that it is our greatest responsibility when we discover a patient with tuberculosis to see that he

does not further infect the other members of his household and that we make a careful study of all close contacts. We should of course do everything possible for the comfort and improvement of the patient, but we owe our greatest obligation to those who have been living with him, many or all of whom are likely infected and some of whom may have the disease in its earlier and curable stage.

We should send the patient to a sanatorium if possible. If not, we should put him to bed at home and teach him to take the necessary precautions to protect the other members of the family. In Chicago they enforce a law prohibiting a positive sputum case from living in the same house with a child under sixteen years of age.

In making a study of the contacts we should first give them all, both children and adults, the tuberculin test. Those whose tests are negative will usually need no further study. On those whose tests are positive we should take a clinical history and make a physical examination. On every child reactor we should have X-ray films made. It is desirable also to have films on every adult reactor who has been living in the home with an open case of tuberculosis. In no other way can the disease be definitely excluded. If all the adult contacts cannot have films, it is very important for all those who give strong tuberculin reactions and all who have suspicious symptoms or physical signs to be X-rayed.

When practicing physicians generally make such a study as above outlined of their tuberculous contacts, tuberculosis will soon be brought under control. At present the custom of most physicians is to limit their attention to the sick patient himself. Even those greatly interested in preventive medicine and who wish to render a positive health service to their families seem to think it unprofessional to urge the apparently well contacts to come to them for a thorough study. Is it not as much their professional duty to discover any cases of tuberculosis which may be present in the other members of their tuberculous patients' families as it is to protect the others when one member of a family has diphtheria, small pox or typhoid fever? It is only by such a study of the ap-

parently well contacts that tuberculosis can be discovered in the early stage.

Neither should a physician have any hesitancy in charging for such service. It is the most valuable service which he can render to the family and to society. Literature from authoritative public health sources placed in the hands of our patients will educate them as to the need of the whole family being examined and the physician who offers such service will have their increasing confidence and admiration. Indigent contacts should be referred to health officers or to public clinics.

A most interesting experiment in the control of tuberculosis is being made in Lee County, Alabama, by the Rockefeller Foundation in cooperation with the county health department and the county medical society. It is largely a rural county, the largest town having a population of 5,000. There is no sanatorium, but there is a well organized health department and a very capable whole time health officer. An expert in the diagnosis of tuberculosis and an X-ray equipment are provided. An attempt is being made to give the tuberculin test to every man, woman and child in the county and to make X-ray films of all the positive reactors. The tests are given by the health officer. The initial physical and X-ray examinations of all positive reactors are made by the specialist without charge. Suspicious and positive cases are referred to their family physicians for observation and treatment and all positive reactors are urged to go to their own physician for a periodical check up. Visiting nurses are provided. Where sufficient isolation of the positive sputum cases can not be had in the home it is proposed to furnish them with small shacks or tents. All those who are able to pay for them are to be referred to the private roentgenologist for subsequent X-ray films. The services of the specialist for consultation are to be available without charge to any physician in the county. Every physician in the county is reported to be giving full cooperation, and it is probable that the demonstration will be an epoch making one in the control of tuberculosis. In the South, where there are so many well organized health departments, some such plan for handling tuberculosis in counties or groups of counties which cannot

afford a sanatorium should be both practical and economical.

#### TREATMENT

##### Rest

In the modern treatment of tuberculosis REST is the one essential. Rest is of course not a new treatment, but it is only in more recent years that its true value has been appreciated. Few patients who take sufficient rest ever die of tuberculosis. By rest is meant rest of body and of mind, rest for a period of months or longer, at first complete rest in bed, and later bed rest combined with chair rest and mild exercise most carefully prescribed by a physician who fully appreciates the harm which can be done by too much exertion.

Even minimal cases of tuberculosis should take at least a month or two of bed rest. Moderately advanced cases should spend several months in bed and far advanced patients with active disease should spend an indefinite time at complete bed rest. No set rule as to the exact length of time bed rest needs to be continued can be laid down. This must be determined for each patient, depending upon the extent and activity of the lesion and the resistance of the individual.

A most common mistake in treating tuberculosis is to let the patient out of bed as soon as his active symptoms subside. In favorable cases bed rest will usually cause symptoms to disappear rapidly. The patient soon looks and feels so well he chafes at being kept in bed and he frequently thinks the doctor must have made a mistake in his diagnosis. We must remember that, although symptoms improve rapidly, the pathology changes for the better exceedingly slowly. No matter how great the clinical improvement, X-ray films rarely show much improvement in the lung lesions in less than five or six months.

The change from bed rest to chair rest should be very gradual. In favorable cases with moderate lesions the time out of bed should be increased so slowly that it would take about three months for a patient to change from full bed rest to full chair rest. Exercise should not be begun until after full chair rest and it should be increased so slowly that a period of some three or four months or longer is required for the average patient to get a thirty minutes slow

walk twice daily. Changes in the patient's routine should be governed not only by symptoms and physical signs, but also by X-ray films at intervals of a few months. Exercise should be prescribed very carefully by the physician, the patient being given a definite schedule to follow. Haphazard directions to "take it easy" or "take a little exercise" usually result in the patient taking too much exertion and causing an extension of the trouble in his chest. Patients need to be under the care of a good physician more when they are able to begin getting out of bed and when they begin their exercise than when they need to be constantly in bed.

It is very difficult to persuade tuberculous patients to continue the rest cure as long as they should. Because they soon begin to feel so well and because most of them feel the pinch of poverty they insist on returning to a normal life too soon. It will tax the ingenuity of the physician to persuade his patients to continue to chase the rest cure for months after they begin to look and feel so well. But upon his ability to do so depends his success in treating tuberculosis.

The value of rest in tuberculosis is strikingly illustrated in the various methods of applying rest locally to tuberculous processes. The advantage of putting the tuberculous bone or joint at rest by applying a plaster cast is familiar to all. Tuberculous laryngitis used to be considered such a serious complication as to make the case almost hopeless. It is now known that the vast majority of reasonably early lesions of the larynx will entirely heal if the patients will only refrain from using their voices, and usually if they will only speak in a soft whisper. Most of those which do not heal by voice rest alone will heal by combining the use of the electric cautery with voice rest.

#### COMPRESSION THERAPY

The use of compression therapy in moderate and far advanced tuberculosis represents the greatest advance in the treatment of tuberculosis in our generation. It is significant also that the benefits from compression therapy are largely due to the fact that the diseased lung is put at rest.

Of the various methods of compression, pneumothorax is the method of choice, and

should always be used when possible. It has been used to a limited extent in most of the sanatoria of the country for the past twenty years, but it is only lately that its use has been so greatly extended. It is now considered that at least one-third of adult sanatorium patients should take air, while formerly only about one-tenth were thought to be suitable. All unilateral cavity or positive sputum cases and all teen age patients with a moderate amount of disease which are largely unilateral, whether the sputum is positive or not, should take air. It is also now used in many cases with much more trouble in the better lung than was formerly thought safe. In the hands of careful men even bilateral pneumothorax is now successfully applied in selected cases. When a good collapse can be obtained, recovery is both more rapid and more certain. What is also very important, the sputum almost always becomes negative and usually ceases in a short time after the treatment is begun.

At the beginning of pneumothorax treatment and for some months afterwards it is safer for patients to be in a sanatorium, but later they can safely get refills of air from careful private physicians at home. In North Carolina outside of resort centers there are more than twenty physicians in general practice who now give the treatment.

A fair percentage of patients who need pneumothorax can't take it because pleural adhesions prevent a collapse of the lung. By offering relief to many such patients modern surgery has accomplished one of its greatest triumphs.

Among the various surgical procedures used the most common and probably the most useful is phrenicectomy or phrenic evulsion, the removal of the lower portion of the phrenic nerve. This produces paralysis of the diaphragm on the operated side and brings about a partial collapse and lessens motion of the diseased lung. The results are not as satisfactory as in pneumothorax, but in properly selected cases the operation nearly always results in improvement both in the symptoms and in the lung condition. The cough is greatly improved and the expectoration very much reduced. Frequently cavities close and the sputum becomes negative. In the hands of an exper-

perienced chest surgeon it is a simple operation and is done under local anesthesia. We have had more than 275 cases operated upon with almost uniformly good results.

Some of our most striking results have been with this operation in combination with pneumothorax in cases in which a full collapse could not be obtained with the air alone on account of adhesions. This method is also now used at times in combination with scalenectomy resulting, so it is claimed, in more frequent closure of apical cavities. Among other surgical compression procedures may be mentioned pneumolysis, intercostal neurectomy, apicolysis, and thoracoplasty. On account of lack of time I will only discuss the latter.

Thoracoplasty is a much more extensive operation than phrenicectomy. In fact it is a very serious operation consisting in removing sections of the posterior portion of the upper eleven ribs. It is only done in unilateral disease without serious complications in which other methods have failed to restore the patient to a reasonable degree of health. It is usually not advised except in cases where the patient's sputum remains positive or in which he would otherwise continue more or less an invalid for life. The operation is always done in at least two and often in three stages. Many patients by means of this operation have not only escaped permanent invalidism, but have been restored to their former occupations and to their place in society.

#### TUBERCULOUS ENTERITIS

The modern treatment of tuberculous enteritis marks one of the most advanced steps in the treatment of tuberculosis. Until only a few years ago tuberculous enteritis was considered to be a complication which placed the patient in the hopeless category. It was thought that little could be done for him except to make him comfortable. A bland diet and the opiates were the main dependencies.

The present advance is due not only to improved methods of treatment, but also to improved methods of diagnosis. Previously the condition was not recognized until it reached the terminal stage causing persistent diarrhea and pain. Now by means of the X-ray most cases can be recognized before any distressing

symptoms appear and before extensive ulceration of the bowel takes place. All patients with positive sputum should have a series of gastro-intestinal films made, since frequently patients with early intestinal lesions and at times even those with extensive lesions have no symptoms. Brown(2) says that no moderately or far advanced case of pulmonary tuberculosis can be considered as thoroughly examined until he has had an X-ray of his gastro-intestinal tract.

In addition to the use of a bland non-bulky and non-irritating diet the more important newer methods consist in the use of the ultraviolet ray or sunlight; of cod liver oil and orange or tomato juice; of calcium intravenously or intramuscularly; and of occasional doses of castor oil.

Less stress is laid on the diet than formerly and some say that in most cases a special diet is unnecessary, but at our institution we think patients do better when a bland non-irritating diet is employed. Sunlight and artificial ultraviolet radiation seem to accomplish as remarkable results in intestinal tuberculosis as in its surgical forms. Just how they promote healing is not fully understood, but it is probably by increasing the vitamin content of the body and by favorable action on calcium and phosphorous metabolism. Either the sun or artificial light may be used. The Quartz Mercury-vapor ultra violet ray apparatus is probably the most satisfactory and also less likely than sunlight to cause fever and a reactivation of the pulmonary lesion.

Practically the same results, as shown by McConky(3), can be accomplished in intestinal tuberculosis by the use of cod liver oil and orange or tomato juice as by ultraviolet radiation. It is cheaper and much more convenient and is applicable even in any rural home. Tomato juice can be obtained in cans at most grocery stores. The cod liver oil and tomato juice should be given after each meal and are not very unpalatable when served cold.

In more advanced cases, where the symptoms are severe, it is well to combine one of the above forms of treatment with calcium therapy. Intravenous weekly doses of calcium chloride or intravenous or intramuscular doses of calcium gluconate will almost always bring speedy

relief from the pain and griping and will also help to control the diarrhea. Weekly doses of castor oil also help to relieve the distention and discomfort which frequently accompany advanced cases.

By discovering the enteritis early and by applying one or more of the above remedies the great majority of cases of tuberculous enteritis can be cured and practically all can without resort to opiates be relieved of their symptoms, which formerly were among the most distressing of any of the dreaded complications of tuberculosis.

#### REFERENCES

- (1) Brown, Lawrason: Pulmonary Tuberculosis With Indefinite Signs. Transactions Of The American Climatological and Clinical Association, P. 165, Vol. 47, 1931.
- (2) Brown and Sampson: Intestinal Tuberculosis, (Lea and Febiger) P. 270.
- (3) McConky, M.: The Treatment of Intestinal Tuberculosis With Cod Liver Oil and Tomato Juice, Transactions National Tuberculosis Association 1929.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "EXOPHTHALMOS FOLLOWING THYROIDECTOMY"

The eye changes in exophthalmic goitre for a long time have attracted medical observers. To the various eye signs some thirty or more names have been attached. The exophthalmos has always been the most prominent and the most interesting. In spite of this, very little is known of its nature and its cause. The two most generally accepted theories attribute it to increased activity of certain smooth muscles in the orbit and to increase of intraorbital fat. Both of these theories are open to various objections.

Apparently some important light has been shed upon the subject by Drs. Naffziger and Jones of San Francisco in a recent article entitled "The Surgical Treatment of Progressive Exophthalmos Following Thyroidectomy" published in the Journal of the American Medical Association Vol 99 page 638 August 20, 1932. The attention of the authors was directed to the subject by a patient who had progressive exophthalmos following relief of the hyperthyroidism by thyroidectomy. While their main object was to secure relief for this distressing condition, they feel that they found an explanation of its mechanism.

As a rule the exophthalmos recedes, at least partially, along with other findings and physical signs following a thyroidectomy. In some cases it remains stationary, while in a third, but smaller group it progresses in spite of the abatement of other symptoms. In this last group the cornea becomes dry from lack of protection, ulcerated, infected, and ophthalmritis follows. Enucleation becomes necessary or death ensues. With the progressive exophthalmos a partial or complete blindness occurs from changes in the cornea, or in the optic nerve or both. This condition has been ascribed to various causes, particularly hypothyroidism and myxedema, but the fact remains that so far very few of these cases have res-

ponded to any form of treatment.

The treatment of Drs. Naffziger and Jones consists of decompressing the orbit. A frontal bone flap is turned down, as in brain operations. The roof of the orbit is exposed and it is removed by rongeurs, also the roof of the optic foramen. The fascia of the orbit is carefully incised. The contents of the orbit can be inspected. Six patients have had this bilateral orbital decompression, four by the authors and two by others. In all cases the results have been satisfactory. The eyes have receded and the vision has returned. This is a radical procedure and of course is not advised solely for cosmetic reasons, but only where there is danger of losing the eye.

Of particular interest are their findings upon exploring the orbit. The contents of the orbit were under pressure and bulged on being released. It is important that they found no excess of fat; in fact there was very little fat present. Thus this theory can be disregarded. What they did find which was very pronounced was that the extrinsic muscles of the eye were three to eight times normal size. Sections of the muscles were taken. On microscopic examination they showed edema, perivascular round cell infiltration, fragmentation and destruction of muscle fibers and increased fibrous tissue with areas of hyalinization. They conclude that the exophthalmos is of mechanical origin the result of the pronounced swelling of the extra-ocular muscles. So far no satisfactory explanation has been offered as to why this swelling takes place. In myasthenia gravis similar changes have been reported in the extrinsic eye muscles. The changes are similar to those in the heart muscle in thyroid disease, and to the muscles in Volkman's palsy, and also in experimental instances of chronic venous obstruction. These speculations are interesting but so far have led to nothing definite.

In brief it appears that progressive exoph-

thalmos following thyroidectomy can be relieved by decompression of the orbit. The exophthalmos is the result of pronounced swell-

ing of the extrinsic muscles of the eye. The cause of this swelling is unknown.

## SOUTH CAROLINIANA

J. I. Waring, M.D., Charleston, S. C.

DIAGNOSIS OF SYPHILIS. F. B. Johnson, Charleston. *Sou. Med. & Surg.* 95. Jan. 1933 6.

A discussion of the laboratory measures used in the diagnosis of syphilis, with special emphasis on those applicable for early recognition of the disease, such as dark field examination and gland puncture.

ASEPTIC ANASTOMOSIS OF THE COLON. G. T. Tyler, Jr., Greenville. *Sou. M. J.* 26 Mar. 1933 259.

Description of various methods used and of the author's modification of technique and instrument.

POLIOMYELITIS. M. W. Beach, Charleston. *Sou. M. & Surg.* 95 Feb. 1933 85.

A brief consideration of the pathology, symptomatology, and diagnosis.

PNEUMONIA IN KEROSENE POISONING. J. I. Waring, Charleston. *Am. J. Med. S.* 185 Mar. 1933 325.

A survey of 23 cases of kerosene poisoning in children and a number of experiments on dogs, which indicate that the serious and fatal cases of poisoning are due to aspiration of kerosene into the lungs, with production of inflammation and oedema.

INJURY OF THE LARYNGEAL BRAN-

CHES OF THE VAGUS NERVE IN THYROID SURGERY. W. H. Prioleau, Charleston. *The Southern Surgeon* I Jan. 1933 287.

The author discusses the complications resulting from such injury, and comments on the relationships and the delicate structure of the nerves and the necessary precautions in operating.

CALCIFICATIONS IN THE SPLEEN. H. Rudisill, Charleston. *Am. J. of Roentg.* 28 Dec. 1932 805.

Four cases out of 350 X-ray examinations. The patients had no symptoms referable to the spleen. The shadows were supposed to be those of phleboliths.

A DIFFERENTIAL CLINICAL SIGN OF APPENDICITIS. G. E. Thompson, Inman. *Sou. M. J.* 26 Feb. 1933 200.

This refers to eliciting pain in the region of the appendix by having the patient kick with his right foot.

JOSEPH JOHNSON, J. H. Hoch, Charleston. *Am. J. of Pharm.* 750.

A brief sketch of the life of Dr. Johnson of Charleston (1776-1862) who practiced medicine, conducted a drug store, was one of the organizers of a public dispensary, and one of the promoters of the first U. S. pharmacopoeia.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

MAY, 1933

No. 5

The outcome of any tuberculous infection depends upon the resistance offered by the body. Whatever subtracts from the patient's physiological resources presumably hinders recovery. Concurrent disease of any kind places a handicap on the tuberculous patient. Syphilis is widely prevalent, tends to be chronic, is often undiscovered, and frequently masquerades as something else. To what extent does syphilis complicate tuberculosis? Oscar Orszagh of Budapest summarizes in "Tubercle" of January 1933, certain statistics, conclusions and implications bearing on the coexistence of tuberculosis and syphilis. The following abstract of his article was prepared by the American Social Hygiene Association.

\* \* \* \*

### PULMONARY TUBERCULOSIS AND SYPHILIS

Deaths from syphilis rank high; in England 10 per cent, in France 16 per cent, in the United States 17 per cent, of the total mortality can be traced to syphilis. On the other hand a study of a group of luetic patients in Germany indicated that 26.67 per cent of them died of tuberculosis against 22.5 per cent dying of syphilis. Similarly, in Finland of 734 syphilitic patients, 25 per cent died of tuberculosis while only 15 per cent died of syphilis. Post-mortem examinations of 500 cases of syphilis showed that the cause of death was tuberculosis in 10.6 per cent of cases. These and other statistical studies and clinical observations indicate that syphilis hastens the progress of tuberculosis.

Because of the frequent coexistence of tuberculosis and syphilis, it is important that a careful search be made in tuberculous patients for evidences of syphilis. This search should include as an important feature, a careful history with repeated questions on subjects which might bring syphilis to light, as for example, history of primary sore, rashes, miscarriages and family histories. At the Queen Elizabeth Sanatorium in Budapest, only 1.7 per cent of the tuberculous patients having syphilis gave a clear

history of this disease, while the total number found to have syphilis on the basis of history, and serological and clinical examinations was 9.3 per cent of all the patients in the sanatorium. It is desirable to examine the blood of the tuberculous patient routinely at least once and preferably oftener and to employ two tests as for example the Wassermann and one of the precipitation tests, bearing in mind always that the blood test may be negative even in the presence of syphilis. Orszagh does not think it necessary to examine the spinal fluid in the majority of cases, a judgment with which the reviewer does not fully agree.

#### *Similarity of Symptoms and Lesions*

A good many luetic conditions aremistakable for tuberculosis. Thus, there may be general systemic manifestation in early syphilis such as loss of appetite, paleness, raised temperature, headache, chest pains, gastric disturbances and jaundice, symptoms which resemble those of tuberculosis. In the secondary stage of syphilis patients may suffer from bronchitis and sore throat. Usually the lymphatic nodes are enlarged especially those of the groin and neck, and enlarged hilar lymph nodes are not rare in syphilis. Chronic syphilitic skin lesions and chronic syphilitic laryngitis are occasionally mistaken for tuberculosis. Pulmonary syphilis can cause alterations of lung tissue quite similar to those of tuberculosis. Disseminated gummata may resemble miliary tuberculosis, ulcerated gummata may resemble cavitation of tuberculosis. Histologically the lesions of pulmonary tuberculosis and of pulmonary syphilis may be indistinguishable. It is to be borne in mind that the two diseases may be present in the lung at the same time.

Simple pulmonary syphilis does not occur so often as the clinicians and roentgenologists diagnose it. Neither is it so rare as the pathologists at present take it to be. The diagnostic difficulties are to be overcome only by exact systematic clinical, serological and X-ray exami-



GUMMATOUS LYMPH NODES

(Congenital Syphilis)

Cases such as the one illustrated above are sometimes mistaken for tuberculosis.

nations. Special significance is attributable to negative sputum, positive Wassermann, characteristic history and the good effects of anti-luetic treatment in arriving at a working diagnosis of pulmonary syphilis.

#### *Syphilis Delays Cure of Tuberculosis*

Tuberculosis at the Queen Elizabeth Sanatorium gave in general a graver prognosis in the presence of syphilis. The longer the intervening period between the outbreak of the two diseases, the less harmfully does lues influence the course of tuberculosis. In judging the effect of syphilis on tuberculosis, it is important to know what the condition of the lung was when syphilis was acquired and whether it has become worse. If the pulmonary lesions are old and healed, or if the patient is in good condition, syphilis as a rule does not affect this condition. But in the case of badly nourished old persons with little capacity for reaction,

syphilis can attack the system to such an extent that the latent tuberculosis may be reactivated and become fatal.

In the same way, aggravation may follow fresh luetic infection in the case of persons whose lung trouble was extensive, but which had only showed slow progress till then. If a person suffering from active tuberculosis acquires fresh luetic infection, and his bodily resistance is weak, then the illness may have a very serious course, though it is also possible that the disease may later calm down and the prognosis become more favorable. Persons suffering from antecedent lues may react to fresh pulmonary tuberculosis infection just as healthy persons would. Tuberculosis becomes fatal only if the lues causes lesions which disturb the working and vitality of the whole body, as for example cardiovascular lesions.

#### *Treat Syphilis with Discrimination*

In the case of pulmonary syphilis the treatment of syphilis should be energetic. In the case of pulmonary tuberculosis complicated by syphilis, the treatment of syphilis should be cautious. In the choice of correct doses, the patient's general condition and the character of the pulmonary lesions are extremely important factors. With a weakened constitution, and active recent and exudative tuberculosis, the treatment of syphilis should be delayed until the general tuberculosis condition has improved and it should then begin with small doses of bismuth. In the presence of fibrous pulmonary lesions syphilis may be treated safely with larger doses of bismuth, and neosalvarsan may be used in moderate doses beginning with .15 grams and going up to .45 grams. Surgical treatment of tuberculosis is not barred by the presence of syphilis provided anti-luetic treatment is administered.

*Pulmonary Tuberculosis and Syphilis, Oscar Orszagh, Tubercl., Jan., 1933.*

## Tuberculosis and Syphilis Compared

	TUBERCULOSIS	SYPHILIS
Essential lesion	Tubercle	Gumma
Essential pathology	Destruction of tissue	Replacement of active with inactive tissue
Prevalence	About .7% of population (active cases)	About 5% of population
Diagnostic criteria	History, symptoms, physical signs, tuberculin test, X-ray, discovery of organism	History, physical signs, blood test, X-ray, discovery of organism
Prognosis	Good with early treatment	Good with early treatment
Treatment	General: rest, nutrition, hygiene, collapse	Specific: arsenicals, bismuth, mercury

## SOCIETY REPORTS

**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, FEBRUARY  
28th, 1933, at 8:30 O'CLOCK**

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: B. R. Baker; Barnwell; Beach; Beckman; Bowers; A. J. Buist; A. J. Buist, Jr.; Burn; Cain; Cannon; Cathecart; Culbreath; de Saussure; Heidt; Jackson; F. B. Johnson; McCrady; Maguire; Martin; Mood; O'Driscoll; F. L. Parker; Pearlstine; Peeples; F. R. Price; J. J. Ravenel; Rhame; R. B. Rhett; Richards; Scott; W. A. Smith; W. H. Speisegger; Sughrue; E. W. Townsend; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr.; R. Wilson. (39).

Guests: Dr. Roe E. Remington.

The minutes of the meeting of February 14th were read and confirmed.

Under Miscellaneous Business, Dr. T. H. Martin submitted the following amendment to the By-Laws:

Amendment to Amendment to Chapter 5, Section 2, adopted at the meeting of April 12, 1932:

That the word ten be substituted for fifteen, and that the word three-fourths be substituted for the word half. So that the amendment will read: The annual dues shall be ten dollars, which must be paid by April 1st of each year. Out of State members who are members of their respective state Medical Associations and the American Medical Association shall have their fees reduced to three-fourths of that of the regular members.

Any member who shall fail to pay his annual dues by April 1st shall ipso-facto be held as suspended without action on the part of the Society.

A member suspended for non-payment of dues shall be restored to full membership on payment of all indebtedness.

The President that this take the prescribed course.

Dr. A. J. Buist then submitted the following amendment to the By-Laws:

Amendment to Amendment to Chapter 1, Section 12, adopted at the meeting of April 12, 1932:

The words "except as stated below" to be inserted after the words "but shall be exempted from all dues," and the following paragraph added.

Honorary Fellows who are not Honorary Fellows of the South Carolina Medical Association shall be required to pay annual dues equivalent to those paid to the State Association in their behalf.

The President directed that this amendment take the prescribed course.

The Secretary read the following letter from the Charleston County Cooperative Exchange:

A new organization is being sponsored in Charleston County by the Charleston County Relief Council, under the direction of Mr. Walter B. Wilbur, which it is believed will fill a definite need in the community by providing employment for many of those who are now idle, by providing buying power for those who now have none, and by creating a market for the producers who are at present unable to dispose of their surplus commodities. This organization is to be known as the Charleston County Cooperative Exchange; it is to be a non-profit-making organization, operated for the benefit of its members. In short, it will serve as a clearing house for goods and services which are now idle and going to waste.

The system comprises three main elements: those who have goods to offer, those who have services to offer, and those who will accept script in trade. In order to effect the many transactions which will be made among these groups, script will be used as a medium of exchange. This script is in no way connected with, nor is it to be confused with, script issued by the City of Charleston. Insofar as the professional man is concerned, he may exchange the script which he receives in his practice for the commodities or services of others which are available to him through the exchange facilities.

These facilities will consist of the goods or commodities which are stored at the exchange warehouse, or the services of carpenters, plumbers, electricians, painters, and other artisans. For example, a physician who has received a certain amount of script in his practice might arrange with the exchange to send competent painters to paint his dwelling or some other property which he might possess.

This plan will not in any way interfere with the practice which professional men now conduct on a cash basis, since those who will have script to offer them will be those who are at present unemployed and who have no cash with which to pay for such services.

It was moved, seconded and carried that this be received as information. On inquiry, the President ruled that any member of the Society who desired to take part in the new organization outlined in the foregoing letter was eligible to do so.

The Scientific Program was called at 9:00 P. M.

Dr. J. Sumter Rhame read a paper on Mortality in Appendicitis. This was discussed by Dr. A. J. Buist.

Dr. T. H. Martin read a short paper on Perforating Duodenal Ulcer, which was discussed by Dr. F. R. Price.

Dr. T. E. Bowers read a paper on Hemorrhoids. This was discussed by Drs. Cain and McCrady, Dr. Bowers closing.

Dr. A. F. Baker, Jr. read a paper on Post-operative Urinary Retention. This was discussed by Dr. J. J. Ravenel and Dr. Martin, Dr. Baker closing.

There being no further business, the meeting adjourned.

W. Atmar Smith,  
Secretary.

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**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, FEBRUARY  
14th, 1933, at 8:30 O'CLOCK**

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: Banov; Barnwell; Beach; Bowers; A. J. Buist, Jr.; Culbreath; W. H. Frampton; Lynch; McInnes; Maguire; Moore; O'Driscoll; Peebles; F. R. Price; J. J. Ravenel; W. J. Ravenel; W. M. Rhett; Sams; Scott; W. H. Speisegger; E. W. Townsend; J. F. Townsend; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr. (26).

Guests: Dr. Roe E. Remington, Dr. Hall, Dr. Branford, Dr. Steinberg and Dr. Eargle.

The minutes of the meeting of January 24th were read and confirmed.

There was no business.

The Scientific Meeting was called at 9:00 P. M.

Under Case Reports, Dr. F. R. Price reported a case of neurocirculatory asthenia. This was discussed by Dr. A. J. Buist, Jr.

Under Special Case Reports, Dr. J. I. Waring reported a case of acute diffuse nephritis.

Dr. W. M. Rhett reported a case of paroxysmal hemoglobinuria, which was discussed by Dr. J. J. Ravenel, and Dr. E. W. Townsend demonstrated hemolysis in the patient's blood.

Dr. M. W. Beach reported a case of acute nephritis, which was discussed by Drs. J. J. Ravenel, Lynch, and F. R. Price.

There being no further business, the meeting adjourned.

W. A. Smith, Secretary.

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**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, MARCH  
14th, 1933, at 8:30 O'CLOCK**

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: A. E. Baker, Jr.; Ball; Beach; Boette; Bowers; A. J. Buist; A. J. Buist, Jr.; Burn; Cain; Cannon; Chamberlain; Culbreath; de Saussure; Hope; Jenkins; F. B. Johnson; La Roche; Lynch; Maguire; Martin; Mazyck; Mitchell; Mood; Moore; O'Driscoll; Pearlstine; Peebles; F. R. Price; Prioleau; J. J. Ravenel; W. J. Ravenel; Rhame; R. B. Rhett; W. M. Rhett; Richards; Rudisill; Rutledge; Sams; Sanders; Scott; W. A. Smith; W. H. Speisegger; Sughrue; Taft; E. W. Townsend; J. F. Townsend; Van de Erve; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr.; Robert Wilson. (52).

Guests: Dr. David T. Smith, of Duke University; Captain J. F. Murphy of the U. S. Navy; Dr. Robert Wilson, Jr.; Captain Edgar Thompson, U.S.N.; Dr. William Ryan, of Beaufort; interns and medical students.

The minutes of the meeting of February 28th were read and confirmed.

The Secretary read a letter from the American Tobacco Company inviting the Society to visit the local tobacco plant. It was moved by Dr. R. B. Rhett that the Society accept with pleasure the

invitation extended from the American Tobacco Company, through Dr. C. B. Boette, to visit the cigar factory, and that a Monday, at 4:00 P. M. be selected for the visit. This was seconded and carried.

The Secretary read a letter from the Florence County Medical Society, promoting the candidacy of Dr. William Egleston for election to the office of President Elect of the South Carolina Medical Association. This was received as information.

The Secretary read the following letter from Mr. H. S. McCowen:

Harry S. McCowen  
Attorney at Law  
1101 Hurt Building  
Atlanta, Ga.

March 9, 1933

Dr. W. A. Smith  
Pine Haven Sanatorium  
Charleston, S. C.

Dear Sir:

I am very anxious to locate a man who spent January in Atlanta, and who left here with Cadillac Two-Passenger Coupe, Motor No. 808786, belonging to the Capital Automobile Company. While here he gave his name as Dr. John Bellinger but is the same person as the "Jerry Castle" referred to in the attached clipping from the American Medical Association Journal.

We have just learned that this man spent from January 29th to March 4th in Asheville, N. C. and we have reason to believe that he might be in Charleston. If you hear anything from him won't you please telephone or telegraph me and reverse the charge?

Yours respectfully,

Harry S. McCowen.

Enclosure:

JERRY CASTLE VICTIMIZES DULUTHIANS.  
Director of Public Health Dr. Mario McC. Fischer of Duluth reports that one A. L. (Jerry) Castle, alias Ernest Donald Roberts, has recently victimized a number of Duluth physicians. According to Dr. Fischer, Castle pretended to be a physician on vacation from Honolulu. His method of approach was through the interns of a local hospital, to whom, for a few weeks, he was extremely gracious and whom he entertained generously and at times lavishly. Following Castle's sudden departure, a crop of bad checks turned up. Castle, it is said, claims to be Welsh and to have had his training in England. He speaks English, French, German and Greek, and has a foreign accent. He has a knowledge of medicine and of prominent medical men, his manner is gracious and polite, and he converses intelligently on music and literature as well as on medicine. He is a good polo player. The description of his physical appearance is: well dressed, black mustache, dark hair, swarthy complexion, height about 5 feet 8 inches, age about 30, weight about 150 pounds, hazel gray

eyes, nose inclined to be Roman type, teeth unusually white and even. As recently as September 4 he was known to be in Minneapolis. Dr. Fischer sends this information in the belief that other hospitals, medical centers and physicians may be victimized.

This was discussed by Dr. Robert Wilson, who said he had heard something about the man referred to, while in Atlanta. It was suggested that the members of the Society be on the alert so as not to be taken in by this man.

Under Miscellaneous Business, the amendments which had been proposed at the last meeting came up for discussion. On vote, the following amendments were adopted:

Amendment to Amendment to Chapter 5, Section 2, adopted at the meeting of April 12th, 1932:

That the word ten be substituted for the word fifteen, and that the word three-fourths be substituted for the word half. So that the amendment will read: The annual dues shall be ten dollars, which must be paid by April 1st of each year. Out of State members who are members of their respective State Medical Associations and the American Medical Association, shall have their fees reduced to three-fourths of that of the regular members.

Any member who shall fail to pay his annual dues by April 1st shall ipso-facto be held as suspended without action on the part of the Society. A member suspended for non-payment of dues shall be restored to full membership on payment of all indebtedness.

Amendment to Amendment to Chapter 1, Section 12, adopted at the meeting of April 12th, 1932:

The words "except as stated below" to be inserted after the words "but shall be exempted from all dues" and the following paragraph added:

Honorary Fellows who are not Honorary Fellows of the South Carolina Medical Association shall be required to pay annual dues equivalent to those paid to the State Association in their behalf.

Dr. J. H. Cannon brought up the matter of membership of out of state physicians in this Society, stating that the constitution of the American Medical Association prohibited having these members, and expressed his opinion that they should be notified and dropped. There was a great deal of discussion, in which the following took part: Dr. Robert Wilson, Dr. F. R. Price, Dr. Prioleau, Dr. Hope, Dr. Cain, Dr. Lynch and Dr. Rutledge. Dr. Rutledge moved that the members be retained until the American Medical Association kicks them out. This was seconded. Dr. Cannon then moved to table the motion. On vote, the motion to table was lost. The original motion proposed by Dr. Rutledge was adopted by majority vote.

The Scientific Session was called at 9:00 P. M.  
The President introduced the speaker of the evening, Dr. David T. Smith, Professor of Bacteriology and Associate Professor of Clinical Medicine at Duke University, who gave an able and interesting address on "The Etiology of Primary Lung Abscesses and Bronchiectasis." This address was illustrated by lantern slides. The paper was discussed by Drs. F. R. Price, Hope, W. A. Smith, R. B. Rhett, Chamberlain and J. J. Ravanel, Dr. Smith closing.

There being no further business, the meeting adjourned.

W. Atmar Smith, M.D.,  
Secretary.

## NEWS ITEMS

Dr. J. C. Harris of Anderson has just passed away after having practised medicine and surgery for half a century. Dr. Harris was one of the pioneer surgeons at the Anderson County Hospital and had an extensive surgical practice throughout the greater part of his life in the Piedmont section of South Carolina. A more extended notice will appear in the Journal next month.

The Eighty Fifth Annual Session of the South Carolina Medical Association was held at Spartanburg, April 18, 19, 20, under the Presidency of Dr. J. R. Young. The attendance approximated 500. The program was planned and executed in the interest of the general practitioner. The next meeting will be held in Charleston in 1934.

During the month of May clinics have been held at the various tuberculosis Sanatoria in the State including Spartanburg, State Park, and Pine-haven. The committee in charge of these clinics headed by Dr. G. T. Tyler of Greenville has met with remarkable success in this work. The idea is to provide short post graduate refresher clinics for the profession of the State.

The American Medical Association meets this year in Milwaukee June 12-16. The railroad rates and other transportation charges appear to be reasonable, particularly in connection with the Century of Progress Fair in Chicago now running. This is a wonderful opportunity for the doctors to not only attend the A. M. A. but the many side trips of a clinical nature provided for visiting physicians this summer.

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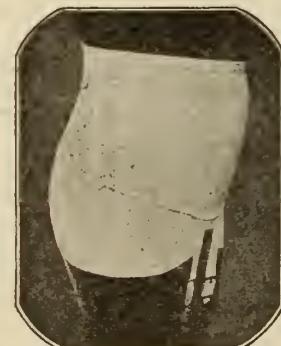
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# The Journal of the South Carolina Medical Association

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### SOCIETY REPORTS

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# The Journal

## OF THE

# South Carolina Medical Association

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### EDITORIAL

#### COMMENTS ON THE A. M. A. MEET- ING AT MILWAUKEE

The American Medical Association in its Milwaukee meeting gave every evidence of its remarkable stability as the world's greatest medical organization. Naturally we think in terms of attendance when we contemplate the annual meetings of such a vast organization. This year there was a slight falling off from the contemplated number planned for. Nevertheless the total attendance was well beyond four thousand. The arrangements were almost perfect for taking care of the convention and it was most fortunate that the heat wave was temporarily lifted and therefore the weather delightfully cool. The scientific programs were most excellent and the scientific exhibits in many instances correlated with the papers presented were extraordinary. In fact the scientific exhibits have become one of the greatest educational features in American Medicine. The commercial exhibits continue to be of ab-

sorbing interest to every doctor also.

The entire medical profession of America awaited with keen anticipation pronouncements of the House of Delegates. It is gratifying to record that everything worked smoothly in the interest of the American practitioner from a legislative standpoint. The reports of all of the committees bearing on the relationship of the American doctor to his patient indicated that a firm decision to do everything in its power to support the independent practice of medicine and the individual rights of the doctor and his patients is going to be a fundamental principle of the American Medical Association. The A. M. A. is doing a great deal to discourage questionable forms of contract practice and questionable health insurance. No radical legislation was enacted. The House of Delegates approved unanimously the stand taken by the officials of the A. M. A. in favor of the minority report of the Committee on the Costs of Medical Care.

The financial status of the A. M. A. is sound

and the loss of membership very slight. The publications of the A. M. A. have no superiors anywhere in the world and they will be continued on the same high scientific basis. In comparison with other national medical publications of a similar nature the Journal of the American Medical Association has no equal and the price of seven dollars still remains and is lower than many other publications of its kind.

Economic conditions have profoundly affected the medical profession but it is most fortunate that the ranks of organized medicine continue to hold without serious breaks anywhere.

It is our opinion that there has not been a time in twenty five years so important for every American doctor to hold on to his membership as a member of the American Medical Association. It is only through this organized stand that the medical profession of this country will be able to hold the high place vouchsafed to it for centuries.

---

DR. J. W. JERVEY THE NEW PRESIDENT OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY

South Carolina is fortunate this year in the honors bestowed upon some members of the medical profession by national organizations. One of these is the elevation to the Presidency of one of the world's greatest special societies of Dr. J. W. Jervey of Greenville. This distinguished honor rarely comes to the South, in fact, only twice before has this been the case. Dr. Jervey has been an active member of the Triological Society for twenty four years. He has been Chairman of the Southern Section twice and for six years a member of the Council. The roll of past presidents of this organization includes some of the world's most famous doctors. In some instances their names are household words throughout the nation. To mention only a few of them the following come to mind: Drs. Edward B. Dench, Charles W. Richardson, J. A. Stucky, Wendell C. Phillips, Chevalier Jackson, Dunbar Roy, Ross Hall Skillern, Max A. Goldstein. The meeting just held in Chicago was the thirty ninth so it will

be readily seen that Dr. Jervey has held membership in the organization from its early years. For a long time his name has appeared almost every year as an essayist or to open the discussion on some important paper. Dr. Jervey is well known as a brilliant speaker and a most interesting writer. He was one of the first Editors of the Journal of the South Carolina Medical Association. He was one of the first Councilors assisting in the reorganization of the Association in this State a quarter of a century ago. He has given largely of his time and means to the promotion of organized medicine. He is a past President of the South Carolina Medical Association. It is not too much to say that Dr. Jervey is one of the best known men in his special field of endeavor in the United States.

In the elevation of Dr. Jervey to this exalted position just accorded him at Chicago we hope that through his efforts this great Society may be brought to South Carolina for its meeting early in 1934. We bespeak the loyal support of the members of the South Carolina Medical Association in the event they are called upon to use their influence in bringing this great body of eminent specialists to our State.

---

DR. C. F. WILLIAMS HIGHLY HONORED

The election of Dr. C. F. Williams of Columbia, head of the South Carolina State Hospital, President of the American Psychiatric Association is a well deserved tribute to one of the best known South Carolina doctors. Dr. Williams, some twenty five years ago, was the first full time Secretary of the State Board of Health in which service he gave evidence of his remarkable executive ability. For many years now he has been the general manager of one of the greatest institutions of our state. Under his direction the State Hospital has become one of the leading institutions of its kind in America. The recent remarkable study of such institutions by a special committee of the A. M. A. just published and reported at the A. M. A. meeting in Milwaukee rates the State Hospital of South Carolina as one of the best. Dr. Williams is a past President of the South Carolina Medical Association and has been accorded numerous other honors.

## SCHOLARSHIPS AVAILABLE AT PEDIATRIC SEMINAR

We are glad to announce that notwithstanding the economic conditions the Southern Pediatric Seminar at Saluda has available five scholarships for the term beginning July 24 for South Carolina doctors. The session will last two weeks. These scholarships have a monetary value well worth considering by any general practitioner particularly interested in pediatrics. Preferably, these scholarships are given to physicians in the smaller towns and rural districts. Applications may be made through the Journal or direct to the Seminar at Saluda, N. C.

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## DEATH OF DR. J. C. HARRIS OF ANDERSON

One of the best known Honorary Fellows of the South Carolina Medical Association has passed away after fifty years of practice. Dr. Harris was one of the pioneer general surgeons of the Piedmont section of the State. Long before the Anderson County Hospital was established twenty five years ago Dr. Harris was a conspicuous practitioner of surgery over an extended territory in Anderson County and adjoining localities. Dr. Harris was one of the first to do major surgery at the Anderson

County Hospital when it was established and from that time until the day of his death he was a staunch supporter of the institution. It is vouchsafed to few doctors to live the life of an active practitioner for half a century and to maintain good health for all that long period as was the case with Dr. Harris. In his most active period even he never failed to attend the meetings of the State Medical Association as well as his county and district societies. He was a loyal supporter of organized medicine to the very end of his career. In his earlier years when he observed cases in his practice he thought should be recorded in the literature he wrote them up and the transactions of the South Carolina Medical Association bear testimony to this fact. Dr. Harris, however, was not a prolific writer. He was one of the best known and best loved citizens of his section of the State. He had many admirable traits of character. He was generous to a fault. When he was at the height of his surgical career hundreds of doctors looked to him for assistance with their difficult surgical problems. Throughout his professional life he continued to be keenly interested in general practice. His surgical practice covered a wide range of operations. He will be greatly missed in organized medical circles in South Carolina, as well as by a multitude of devoted patients and friends.

## ORIGINAL ARTICLES

### \*HYPOCHONDRIASIS

By D. H. Smith, M.D., *Glenn Springs, S. C.*

I feel assured that you will pardon not only the brevity but the lack of scientific matter and literary finish of this paper when I express to you that I commenced and ended same under more or less adverse circumstances.

Hypochondriasis, the subject which I wish to discuss briefly tonight may be defined as a morbid anxiety about one's physical well being, and practically, always associated with imaginary symptoms, or simulated disease, and more or less marked depression; another definition is, a state in which ideas control the body and produce morbid changes in its functions.

Hypochondriasis is a subject about which much can be said, the word as we know is of pure Greek origin and means "under the cartilages." It was at one time or another supposed to have some connection with the spleen and is a sub-head or represents a section or division of an important neuro-psychosis.

Perhaps it may appear to some as more or less unimportant, but when one takes into consideration the wide variety of causes with its multi-tudinous and their many ramifications, one may, at once, become impressed with the great influence it may have on human behaviour, individually and collectively, therefore, it should be regarded as of far reaching significance.

I shall not attempt to cover the subject in a thorough manner, but shall endeavor to mention some of the most important features and if in doing this, I shall, by chance, arouse a certain amount of latent energy or inspire some interest in my hearers, thereby provoking some discussion, however uninviting, the subject may be, I shall feel amply repaid. The causes of this condition are many and varied, in some instances as a consequence of an inability to find an underlying pathologic physical condi-

tion as a basis of many manifestations of a hypochondriasis, practitioners have been forced to regard these symptoms as genuine disease entities. Neuro-psychiatric manifestations are frequently due to some underlying pathological process, or processes. For example, I would mention the case of Mrs. S.— white, female, age 48, who was operated on sometime last year for a pelvic growth, cystic in character and containing four or five gallons of thin straw colored fluid. On routine examination and in the history of her case, I discovered that several years ago, Mrs. S., blew up with a nervous explosion and was committed to the S. C. Hospital for the insane. This was about five years prior to the appearance of her pelvic condition which, incidentally, proved to be malignant, and caused her death a few months later. I might say, in passing that I aspirated about 45 gallons of fluid from her abdomen over a period of about four months. Her family history was positive for an hereditary neuro-psychiatric tendency, or predisposition. Now the thought that I wish to get over to you in this connection is that there is often some more or less real pathology underlying a neuro-psychiatric manifestation, and should, if possible, be discovered before irreparable damage is done. I have often wondered, as in the case of Mrs. S., if her case had been subjected to an exhaustive study about the time she was committed to the State Hospital for the Insane, would it not have been possible by some means or other, to have discovered the condition present in time to save her from a horrible death by cancer of the pelvic organs. I think it should have been possible to have made these examinations in the State Hospital. Perhaps, some practitioners of medicine or surgery may possibly question any connection or relation between the neuro-psychiatric condition and the real pathology that terminated in the death of Mrs. S. However, I think this an important point, well worth our serious consideration; I could report many cases along this line but time will not permit it.

\*Read before the Spartanburg County Medical Society, Spartanburg, March 27, 1933.

Now to mention briefly some of the important causes of hypochondriasis, I believe the condition on the increase as I have had an increased number during the last year or more. Perhaps the present state of depression in this land of ours may have some influence in its production. Other causes may be mentioned as domestic and marital infelicity and incompatibility, also business reverses, also various phobias. Fear is the worst thing in the world, and is a predominating factor in the lives of many people. Cares and worries, incident to modern civilization, also the rush and hurry to excel, hopes deferred, and disappointments, also various dietary indiscretions and excesses resulting in discomfort under the cartilages, the great and renowned Sir William Osler, in one of his early editions states, that an intelligent and well educated patient had such a great fear of appendicitis at times that finally, he had his appendix removed, although it was normal at operation. I could mention several instances of this kind in my own practice but we can take comfort in the fact that the surgeons would recommend without compunction, the removal of an appendix that was under suspicion, rather than procrastinate to the point of an appendiceal rupture and abscess formation. Other causes may be mentioned, as bad hereditary influences and poor environment; much could be written about this alone, but I must pass on. The more I see of sick and afflicted human beings, the more I am inclined to believe that there is nearly always a new neuro-psychiatric element operating either as the cause or accompanying symptoms, or manifests itself during the course of many diseases and appears to be a great part of many organic pathological processes.

I believe that the condition of hypochondriasis with its widely ramifying symptoms, and versatile character is capable of counterfeiting almost any disease, symptomatic of this condition are the various phobias. At this point, I wish to give an example—among many I could describe I will now mention these two which occurred in sisters who were young graduate nurses. The family history was quite negative and unessential. However, they were of a high strung nervous temperament, with an unstable background and probably had taken their work

more seriously than necessary. Perhaps, my hand may be called in connection with these cases, but this is my opinion and I am firm in my conviction. These cases demonstrated the presence of the neuro-psychiatric element and especially, fear of disease. These patients had been in bed several months and had had numerous examinations. They had been examined and prescribed for by several good men; I was called in rather late in their cases but on careful and thorough examination, I could not find evidence of tuberculosis, which I discovered they had fears of. My findings were corroborated by a final ex-ray, and fluoroscopic examination. I informed them of my opinion and gave them as much encouragement as I could and urged them to make every effort possible to overcome their depressed state. I have recently observed an apparently new perspective on their part.

Now, there are many of these cases and they need encouragement and good wholesome advice. Cases of this kind and other types really tax the ingenuity and resourcefulness of general practitioners, neuro-psychiatrists and others with whom they come in contact, even the surgeon may be called upon to decide a momentous question as to the advisability of performing operations upon a certain type of hypochondriacs. However, surgery is not a cure for the condition.

I have recently had occasion to examine and prescribe for a female hypochondriac, about 43 years of age, thin and emaciated, having a very hypersensitive nervous system. She had been the round of surgeons, stating that she had four or five pelvic operations to her credit and she is still "cussing" the last man who operated upon her for not doing a hysterectomy. Most of these women want an extraordinary amount of recognition (and perhaps they deserve it). I believe many of them enjoy the ether. However, this class does need sympathetic cooperation for they are actually sick.

Symptomatically, hypochondriasis is characterized by the various phobias, as, Pathophobia, Phthisiophobia, Claustrophobia, Agrophobia, Lyssophobia, Aerophobia, Siderodromophobia, and many others, too numerous to mention.

Now the question may be asked,—Medically —Just what is Hypochondriasis? It, I think,

is a morbid mental condition, characterized by emotional depression, and by the apprehension of existing physical disease, and not infrequently by the unconscious simulation of the symptoms of some physical disease. These simulations of disease will depend largely upon individual's general intelligence and knowledge of medicine. I think that hypochondriasis is always a manifestation of fear. The hypochondriac is in a state of apprehension and the assumption by him that some part of his body is diseased is merely a transformation of the fear state into the physical state. Several years ago, a young man depleted by hard work and actually emotionally depressed and uneasy about himself, went to the mountains for a rest. His fear drove him to a doctor. The doctor told him that he was threatened by tuberculosis and that night, the young man cut his throat and almost bled to death. A thorough examination revealed the fact that he did not have the disease. He was given good wholesome encouragement and is now in good health. But the doctor unwittingly gave him what was worse than tuberculosis, the fear of it. The fear that one has a disease is always worse than the disease, so far as discomfort is concerned.

I see from time to time, men who fear that they have syphilis. Syphilophobia is harder to combat—both by patient and doctor than syphilis. Fear causes more ill health and probably more deaths than all germs. Sometimes the original cause of the fear is so far back in the individual's life—in childhood, for instance—that it has been forgotten entirely and cannot be recalled. The search for the cause of the fear and the meaning of it is always interesting and sometimes helpful. But the point to remember is, that hypochondriasis is not a physical disease, but an abnormal mental and emotional condition which is trying without the patient's understanding what is going on, and to express itself through simulation of disease of the body. If the patient's condition is dealt with by treating the physical disease which does not exist, then the patient's condition will be made worse. The patient's mental condition must be treated.

Now, gentlemen, at this point of our discussion, I wish to give you an account of my experience with what I consider as a typical case of this disease. The case is as follows:

The case of Miss B—about 30 years ago. There was a young lady about 21 years old living in a remote part of Spartanburg County with her family. This young lady was engaged to a young man and was to be married soon. On a certain Sunday afternoon, they were out riding in an open buggy, driving a wild mule, when an electric storm came up and, while crossing a stream over a rocky ford, the mule became frightened, upsetting the buggy, throwing Miss B. M. and her companion out on the rocks. The injury to her companion resulted in his death a few weeks later and, to her, proved to be more or less insignificant other than some injury to the lumbo-sacral region. According to the history, as given me about the year 1910 when she came under my care, was that she promptly went to bed at the death of her fiance and remained in bed for about 21 years. I prescribed a great deal of medicine for what I soon discovered to be her imaginary symptoms. I also exhausted my resources with respect to good, wholesome advice and encouragement. During my visits from year to year, it was very evident that Miss B.M. was a great pet with her father, and probably, the reverse with the other members of the family. At times, she was most intractable, making no effort to get out of bed.

During the spring of 1923 or 1924, after the death of her father it became necessary to make certain changes in this family's code of living. At this time, I called in a consultant, Dr. J. M. Beeler, who was at that time connected with the State Hospital for the Insane. As a result of this consultation, Dr. Beeler assured success if allowed to commit the patient to the State Hospital. This form of treatment was refused by the family. However, it was decided to place her in the Waverly Sanitarium at Columbia, S. C. after much opposition by the patient herself. I accompanied her there in an ambulance. During the trip she was so nervous and upset that it became necessary to make frequent stops on the road. She remained in the sanitarium for a year or more and returned to her people unimproved. It again became necessary to dispose of her in some way, at which time, she was placed in the Spartanburg General Hospital. Again calling on Dr. Beeler's kindly assistance, I succeeded in

committing her to the State Hospital for the Insane. Her reaction to this procedure was, to say the least, pathetic. She remained there for three or four years during which time I made several visits and noted with satisfaction, a decided effort on the part of the patient to get well. Finally, her recovery was spectacular. On being paroled, she returned home and has attended to her household duties in a satisfactory manner and has had no sickness since. This case proves to my mind two facts as regards treatment. First, in a great majority of cases, institutional treatment is decidedly best and second, we can offer for treatment too much sympathy. We should, however, first determine that we are dealing with pure uncomplicated hypocondriasis.

#### TREATMENT

So much for that part of the discussion. Now, we will have something to say about the treatment and as we know that hypochondriasis has such a great variety of causes, naturally, the treatment should vary to suit the case as presented. First, I think in certain selected cases, institutional treatment the best, and this probably would apply to most of the cases. The patient should be given careful consideration and plenty of the doctor's time. This is a case where the patient should be treated personally, and not so much stress laid on the case or disease. In other words, we should study our patient's idiosyncrasies, general make-up and reactions. These patients demand a sympathetic and cooperative ear. A great many of them have an uncontrollable desire to sit or lie for hours and detail minutely all their symptoms, and with great patience and sympathy on the part of the medical attendant, some are benefitted by being allowed to "run-down" so to speak, that is, by going over time and again the history and symptoms of their case. All these cases should be gone into carefully and a good history obtained. A thorough examination should be made but I do believe examinations can be easily overdone. These patients are usually hyper-critical and very observant. Therefore, the doctor in charge should be endowed with an unlimited amount of original wit, tact and judgment and should not be too loquacious. An optimistic

attitude is desirable but this, however, can be overdone. Especial attention should be given to foci of infection and if possible, corrected. Environment should be looked into carefully and where possible, all abnormal, stimulating or depressing influences should be corrected or removed. A healthy and optimistic attitude towards life should be encouraged and, if possible, all emotional and physical strain should be removed. There are cases which may respond to psychotherapy or electrotherapy, massage and special baths and certain exercises are helpful. If a surgical condition exists, the patient should come under the care of a good and conscientious surgeon. Personality on the part of the medical attendant has a great deal to do with the recovery of a great many of these patients.

The hypochondriac should have regular hours for rest, sleep and exercise and should have a nourishing and well balanced diet, should also have sufficient diversion and a regular remunerative occupation, which he enjoys.

Now, with respect to drug treatment, every case is a law unto itself. Therefore, the treatment should vary to suit the indications. In some cases, a sedative may be used, as the bromides and barbituric acid group and the phenobarbitals, as luminol. Bowel movements should be regulated, if abnormal. Tonics, as I. Q. & S. with arsenic also phosphorous may be helpful. I have gotten good results with hypodermic doses of sodii cacodylate given daily or every other day and recently neurosine has proven beneficial in a great many cases.

I have purposely omitted saying much about treatment of the patients as the treatment is not infrequently unsatisfactory and long drawn out, and this is a class of patients that drift from one doctor to another and many of them wind up with the chiropractor or osteopath or faith healers. I also feel constrained to believe that there are others present tonight who are probably more competent to discuss this subject than I.

It is my belief, however, that all these miserable and unfortunate hypochondriacs need a new perspective and we, as practitioners, and human benefactors, in treating these cases, should first be honest to ourselves and then to the patients committed to our care.

### \*THROMBOANGIITIS OBLITERANS

By Austin T. Moore, M.D., Columbia, S. C.

For centuries spontaneous gangrene of the extremities has been observed but until 1908 little was known about the underlying pathology. In that year Buerger reported a very exhaustive study of the condition and gave to it the name of thromboangiitis obliterans. His descriptions of the disease were so accurate that little changes have been made since that time. Neither has there been learned a great deal more about its causative factors. During the past decade, however, tremendous progress has been made in the treatment. Following the work of Royle in 1924 which proved that rami-section would elevate the surface temperature of the extremities, tremendous impetus was given to the study of all vascular diseases, and much has been learned about their medical and surgical treatment. Previously these cases were regarded with the greatest pessimism and loss of the extremity by amputation was usually predicted.

#### Etiology and Pathology

Thromboangiitis usually occurs in young asthenic males but older healthy individuals and even females may be affected. It is characterized by vascular thrombosis of an inflammatory nature. Arterial thrombosis is commoner and usually occurs in the main channels in the distal parts of the extremity, such as the dosalis pedis and posterior tibial arteries. Venous thrombosis frequently occurs and may develop in any part of the extremity. The onset may be sudden but usually takes months or years to develop. The etiology is not definitely known. Many theories have been advanced. Buerger observed that it occurred chiefly in the Hebrew race and supposed that they had some inherited predisposition. Since that time it has been noticed that only the Jews who eat a great deal of rye bread are affected. Investigators claim that ergot and possibly many other grain fungi may be causative factors. Recent figures show that 97% of all patients give a history of excessive tobacco smoking. Nicotine poisoning leads to vaso-constriction and it is presumed that this in turn develops the thrombosis.

Whether the condition is due to allergy, an infection or an abnormality of the blood, blood vessels, sympathetic nervous system or endocrine glands has not yet been determined. To positively identify the etiology would greatly help in the treatment.

#### SYMPTOMS

Symptoms usually develop slowly. Following exercise, pains of intermittent claudication are noticed in the calves. As the disease progresses the feet and toes begin to pain and to change their color to a dusky cyanosis when dependent. When elevated they become deadly white. Their surface temperature is lowered and they feel cold and clammy to the touch. As the condition progresses the pains become more severe and are of a burning character. Passive congestion, swelling and other signs of localized phlebitis and occluded arteries are seen. Finally the color changes to a deep purple, the toes feel clammy and cadaverous. No pulse can be felt, trophic ulcers and gangrene develop and the pain is so great as to be completely disabling. All cases do not go to gangrene and the condition may be spontaneously arrested at any stage in its course. The upper extremities may also be involved.

Treatment may be medical or medical and surgical according to the stage of the disease. The earlier treatment is instituted the better is there a chance for cure. Medical treatment consists of absolute rest in bed in the acute cases. The inflammatory process usually subsides in three to six weeks. Smoking is positively prohibited. Focal infections are removed and all debilitating conditions remedied as much as possible. A high vitamin and low carbohydrate diet is given. Any food which may contain grain fungi especially rye bread, is prohibited. Because the basal metabolic rate of these patients is usually low, thyroid extract is given. Heat massage and regular exercises are prescribed and the patient is usually surprised to see how much these measures improve the circulation. The skin should be kept soft and pliable with oily massages. Contrast baths are given once or twice daily. Instructions are given to wear heavy socks and warm clothing to prevent the extremities from becoming cold. The toe nails should be trimmed straight across and the greatest care used to

\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 20, 1933.

prevent any injury or infection. Frequently a patient mistakes a trophic ulcer or beginning gangrene for an ingrown nail. Various measures may be used to increase the blood volume, decrease vasomotor spasm and mechanically increase the collateral circulation. These measures in certain cases seem to be very helpful. The intake of fluids orally should be increased or fluids intra-venously can be given. 300 cc of 5% solium chloride solution can be given every other day for three or four weeks and gradually decreased. Frequent urinalyses should be made to prevent kidney damage. Silbert reports highly satisfactory results from these injections. Muscle extracts, acetylcholine or typhoid vaccine may be used to relax the vasospasm. Typhoid vaccine is given intravenously. About 25,000,000 organisms are given on the first day. The dose is doubled with each injection and repeated every 2 to 4 days. From six to ten injections seem to be as beneficial as a larger number.

#### SURGICAL TREATMENT

Until recent years the only treatment surgically was amputation. If only the digits affected by gangrene were removed the condition frequently recurred and subsequent amputations at higher and higher levels were necessary. This prolonged the patient's pain and suffering, increased his disability and decreased his general physical resistance. A very high amputation seemed to be radical advice but insured the best blood supply for the stump. These maimed and crippled patients usually have more or less pain and discomfort the balance of their lives.

Since the advent of sympathetic surgery the prognosis of Buergers disease has been much improved. Only a certain percentage of the cases are amenable to this form of treatment and a careful study of each case should be made. Certain tests can be made which will positively predict the result which can be expected from sympathetic surgery.

It is known that along with the organic disease and thrombosis of the main blood vessels there is always a certain amount of vasospasm of the smaller arterioles and capillaries. The vasoconstrictor impulses are supplied by the sympathetic nervous system and to remove this supply may allow enough vasodilation to bring

back a normal circulation in the collateral vessels. The main vessels which are completely occluded, of course cannot be relieved by this procedure. The patient should be young and have soft, elastic vessels which are capable of dilating well. In patients over forty-five years of age there is always a question as to the amount of arteriosclerosis present. The best chance for cure is in the early stages of the disease. Various tests may be done to determine the amount of vasodilation which will result in any patient when the sympathetic supply is removed. Very sensitive electric thermometers are used to measure the skin temperature before and after the test. We use the Tycos dermatherm and find it very satisfactory. The fever test as devised by Brown is one of the accepted means of testing a patient for operation. We know that during a fever our sympathetic nervous system allows a vasodilation of the superficial blood vessels, the skin becomes red and heat is eliminated. To produce fever about 50,000,000 organisms of a typhoid vaccine are given intravenously. The skin temperature is taken with the dermatherm at the time of the injection and at the height of the fever. Normally it should rise four to six times as high as the oral temperature. If it does not rise this much the indication is that there is organic thickening or hardening of the arterial system and the results of sympathectomy would be questionable. Brown mapped out a vaso motor index of  $1\frac{1}{2}$  as the lowest figure on which operation can be undertaken. This means that the skin temperature must rise at least  $1\frac{1}{2}$  times that of the oral temperature. A number of other tests have been devised, the fundamental objective underlying each being to paralyze the sympathetic nerve supply to an extremity and to approximate as close as possible the results which will accrue if sympathetic ganglionectomy is performed on that particular patient. General, spinal, regional or nerve block anaesthesia may be used. Perhaps the most accurate method is to inject novocaine directly into the sympathetic ganglia. This can be done without especial difficulty or danger. A method which appeals especially to the writer is the use of spinal anaesthesia. It is easily done and saves both time and expense. The patient is carefully examined to determine

whether or not an operation is practicable in case the test is positive. The patient is prepared and the operating room is set up for operation. Spinal anaesthesia is given so that complete anaesthesia is obtained as high as the sixth dorsal segment. This will temporarily block off the sympathetic supply to the lower extremity as effectually as ganglionectomy will do permanently. Within five minutes an accurate reading of the skin temperature can be obtained. Normally there follows a rise of 8 to 10 degrees Centigrade. Depending on the rise in any given case one can fairly well prognosticate the result of operation. An increase of at least two degrees is necessary to make the operation justifiable and it can be proceeded with immediately.

The operation is not especially difficult but is a delicate one and can be done easiest under spinal anaesthesia. When the upper extremity is involved a general anaesthetic is used. A vertical incision is made posteriorly over the spinous processes. The first and second thoracic ganglia with the intervening trunk can be removed on both sides by resecting the heads of the first or second ribs.

For the lower extremity the operation can either be done through the transabdominal technic of Adson or the posterior approach of Royle. We prefer the posterior approach which is similar to that for kidney operations. The work is entirely extraperitoneal, safer for the patient and dangers of postoperative complications are less. The transabdominal approach has the advantage that both sides can be done at the same time. In either operation the second, third and fourth lumbar ganglia and the intervening trunk is removed. In any given case the vasodilation which is obtained should remain permanently.

In a certain small percentage of cases where operation is impractical direct injection of the sympathetic ganglia with absolute alcohol may be done. The injection is made through four needles placed to each side of the spine; 5 cc of alcohol being deposited in each needle. The injection is preceded by a few cc's of novocaine to be sure that the needles are properly placed. This procedure will give paralysis of the sympathetics for a few months, a year or more. The objection is that it is not without

danger and at times may be followed by severe neuritic pains and sensory disturbances. Its use is mentioned but not advised except in unusual cases.

#### CONCLUSIONS

In spite of the fact that a small percentage of thromboangiitis cases still come to amputation or even end fatally; the big majority of them need no longer to be considered hopeless. A great deal can be done for the most of these patients. At times extremities may be saved when gangrene appears inevitable. Even in the presence of gangrene extreme conservatism should be used and frequently a much lower line of demarcation can be established than was at first anticipated.

Responsibility for these cases should not be assumed alone by either the medical man or surgeon. Their combined services are needed.

Medical treatment consists of general tonic measures and instructions as to the general and local care of the condition, exercises, heat and massage, etc. Also the administration of intravenous therapy; instead of, typhoid vaccine or hypertonic salt solutions.

Surgical treatment consists of sympathetic ganglionectomy in selected cases. If we accept the theory that vasospasm precedes the thrombosis and is a direct cause of it then practically every case should be operated on where the temperature readings indicate that a sufficient amount of vasospasm can be relieved and where the patient's condition justifies an operation.

Adson makes a statement that following the operation the disease appears to be permanently arrested. This again indicates that the vasospasm must be a contributing cause of thrombosis. It has been observed frequently that following an operation pulsations will return to arteries that were previously pulseless. In examining the patients who complain of pains, especially cramplike pains in the feet and calves of the legs, we should make it a routine to feel for the pulses in the dorsalis pedis and posterior tibial arteries. If this were done we would detect more cases of Buerger's disease in its early incipient stage. With properly instituted treatment in this period a very favorable outlook can be anticipated. To be faced with the loss of one or of all extremities is a tragic sit-

uation and if anything possibly can be done it should be done.

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## \*TREATMENT OF INFECTIOUS DISEASES IN CHILDREN

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"I wish you specialists would stop being so theoretical in your papers, with your blood chemistries, electrocardiographic tracings, caloric feedings, and the like and give us something practical and useful." Such was the sentiment expressed by a general practitioner of medicine recently and it is with his suggestion in mind that I am presenting this paper.

I will not attempt a discussion of all the infectious diseases in children, but have selected five which are encountered by most physicians. I shall attempt to present certain facts relative to their treatment which may be of value, facts which I have gleaned from the experience of others and of myself. Some of the statements may appear very dogmatic, but I assure you this is due to no sense of omniscience on the part of the writer, but rather to the limited time which forbids full discussion.

### PNEUMONIA

The treatment of pneumonia in children is primarily one of symptomatic and sustaining nature. Rest, fluids, fresh air, and stimulation when necessary are the prime factors. No specific treatment has yet been advanced which can be used indiscriminately in this condition in children.

Lobar pneumonia, contrary to the impression of many, is not uncommon even in babies, and the mortality rate, in my experience, has been very low. Barring complications, from 80-90% of children and infants should recover. This is one condition in which too much treatment does far more harm than too little treatment. Codeine or luminal for cough and restlessness; enemata, irrigations and pituitrin for distention; alcohol sponges for excessively high fever; digitalis or caffeine, hypodermically, for impending cardiac collapse, but not as a routine procedure; large quantities of fluid by mouth with the addition of intravenous glucose solution when necessary;; cool fresh air in quiet surroundings; careful attention to attendant complications that may arise, especially otitis media and empyema; the use of oxygen in severe cases; these are, in my opinion, the es-

sential factors in the treatment of lobar pneumonia. Transfusions are contraindicated in the average case and should be used only in those exceptional cases where there has been a previous debilitating illness or where, through the advent of complications, the disease is greatly protracted.

Bronchopneumonia, and with this I include those rarer cases of lobular pneumonia, is far more dangerous to the little patient. In addition to the treatment outlined above, more stimulation will be needed, and transfusions are very frequently of life-saving value.

### BACILLARY DYSENTERY

Thanks to public enlightenment, the large number of patients with dysentery, which physicians were called upon to treat years ago, is a thing of the past. And yet, as long as we have unsanitary conditions prevailing, especially in our more rural districts, dysentery will be with us.

It has been my experience that in nine out of ten children, who have a sudden diarrhoea with high fever and the subsequent passage of blood and pus by bowel, the dysentery bacillus can be cultured from the stool.

The treatment may be divided into two stages: In the first stage, when the disease is at its height, the main problem is to restore the fluids which have been lost from the body and to maintain the general strength of the child. Fluids in the form of water, 5% glucose solution, barley water, weak tea, and a 4% soda solution, should be forced by mouth to the point of tolerance. At least three ounces an hour should be given during the day if vomiting does not prevent. Normal salt solution intraperitoneally and glucose solution intravenously should be given if the apparatus is available. Transfusions are of great value in the more severe cases.

If the patient survives the first dangerous period, and frequently he does not, he enters a second stage during which he runs a daily fever from 101-103. There is occasional vomiting, the stools are frequent, loose, and greenish in character and at time contain traces of blood. Tenesmus is marked. Most physicians advise very careful feeding during this period with almost a starvation diet, and yet, I have been favorably impressed with the good results ob-

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tained with a so-called "typhoid diet." Bland, nourishing foods of high caloric value are given as they would be to a patient with typhoid, with the single exception of sweet milk—protein milk or lactic acid milk being substituted in its place. Bananas are especially well borne.

Drugs play a minor role in the treatment of this condition. Paregoric or codeine is useful in alleviating the intense abdominal pain. Bismuth is contraindicated except in the late stages and then is of little value. Starch enemata and colonic irrigations are useful in controlling tenesmus. An occasional mild cathartic may be of value, but strong purgatives should not be given. Anti-dysenteric serum and intestinal antiseptics seem to be valueless.

#### TETANUS

Due to the widespread prophylactic use of tetanus antitoxin, tetanus is a comparatively rare condition, and, yet, it still remains a condition which is dreaded by patient and doctor alike.

The greatest factor in the successful treatment of tetanus is its early diagnosis. A suggestive history, slight trismus, slight rigidity of the muscles of the neck, spine, abdomen or extremities, general irritability and tenderness of the extremities—these should be carefully noted. An early sign, which I recently detected in a patient of mine with an uncertain history and a very slight stiffness of the jaw muscles, was pain along the muscles of the spine elicited by jumping and landing on the heels.

The diagnosis established, treatment should be instituted immediately. One highly recommended procedure is to give antitoxin intraspinally and intravenously the first day, intraspinally the second day, intraspinally and intramuscularly the third day. Subsequent doses depend upon the course of the disease. Basing my conclusions upon five cases which I have treated in the past four years, and I will readily acknowledge that this is certainly too small a series upon which to base any final conclusions, I have adopted a somewhat different course of treatment. My first patient was given antitoxin intraspinally the first day, as well as intramuscularly. The second day he seemed to be considerably better. Another dose of antitoxin was given intraspinally. The tempera-

ture rose rapidly. In twelve hours it had reached 107 and the boy died. In the next four cases, an initial dose of antitoxin was given intraspinally along with a dose intravenously. Subsequent doses were all given intravenously. The antitoxin given intravenously was diluted in from 100-200 cc normal salt solution. All four of those patients are living today, fully recovered. I simply give my personal experience for what it is worth.

Outside of the antitoxin, the treatment in tetanus is symptomatic. For control of the convulsions and muscular spasms, morphine, bromides, luminal, and chloral are useful. I have used avertin in one case with pleasing results. Fluids should be given freely. The spasm of the sphincter ani muscle renders the absorption by bowel very satisfactory.

One suggestion which I wish to make, one which I have never seen mentioned, is the use of adrenalin or ephedrine in the nose. With the teeth firmly closed, the patient must of necessity breathe through the nose and when there is any slight obstruction in the nasal passage, he becomes apprehensive and at times frantic. Keeping the nasal passages open has been of great help.

#### EPIDEMIC (or Meningococcic) MENINGITIS

Three years ago, I presented a paper before this body on meningococcic meningitis and I wish to repeat the suggestions which I made at that time with regard to treatment.

The serum should be given as soon as a diagnosis of purulent meningitis is made, regardless of the type. To delay treatment until a report is received from the laboratory as to the causative organism may mean the difference between life and death. Serum should be given intraspinally once a day and continued until no organisms are to be found in the spinal fluid. Serum may be given intramuscularly, but it is of doubtful value; it is dangerous to give serum intravenously in children. If, after two treatments, there is no clinical improvement, another type of serum should be used. Cisterna puncture is of value when the spinal fluid is too thick to flow through a needle in the lumbar region or in case of suspected block. The giving of serum in the cisterna region is fraught with danger and must be performed most carefully.

Other treatment in meningococcic meningitis is entirely symptomatic.

#### DIPHTHERIA

The greatest factor in the eradication of diphtheria is its prevention and I wish at this point to make a plea for universal immunization. Every child six months and over should receive the safety which toxoid or toxin-antitoxin present. Unfortunately there are many parents, who through neglect, ignorance, or poverty, fail to grant their children this protection. And these children, especially those in poor circumstances, all too frequently develop diphtheria which becomes serious before medical aid is sought.

The greatest factor in the successful treatment of diphtheria is early diagnosis and prompt giving of antitoxin. The antitoxin should be given intramuscularly and not subcutaneously as is frequently done. My choice of site is the pectoral muscle. The suggested doses are: Tonsillar and pharyngeal diphtheria 10,000 to 20,000 units; nasal and laryngeal diphtheria 20,000 to 30,000 units. Where there is laryngeal diphtheria with beginning obstruction to respiration, hospital care is advisable when possible.

I am a firm advocate of intubation for respiratory embarrassment as opposed to tracheotomy. During the past four years I have treated fifty cases by this method. In three other cases, tracheotomy was performed because the obstruction extended below the end of the intubation tube. In only three cases did sufficient tracheal stenosis develop following intubation to require tracheotomy and in each of these the stenosis gradually subsided until the tube was successfully removed. We have had no so-called "chronic tube" case in this series. Removal of the membrane by suction

is undoubtedly the best method of treatment, but must be performed by those specially equipped and trained, and I have neither the equipment nor training.

My method of procedure is to intubate when respiratory embarrassment becomes marked. The tube is removed at the end of three or four days, and again at the end of a week if the first attempt was unsuccessful. In the great majority of cases, the child can breathe without the tube in four to seven days. In a few cases, however, there is still some stenosis at the end of this interval, and in these cases, I give an additional 10,000 units of antitoxin, testing first for sensitivity. Waiting another three or four days, I again remove the tube. In only 6 per cent of the cases, as noted above, has this method failed and tracheotomy been necessary.

Malignant diphtheria is rare, and, yet, each physician will meet this condition occasionally. It is thought by many to be a combined infection of the diphtheria and streptococcus organisms. Massive doses of antitoxin are indicated, but at best treatment is unsatisfactory. The intravenous injection of antitoxin is advocated by some, but this, especially when the regular commercial antitoxin is used, is attended with grave danger. If means are available, I would suggest the giving of serum intravenously in 100-200 cc normal salt solution as a desperate resort.

It cannot be stressed too strongly that absolute rest during the period of convalescence from diphtheria is essential.

#### CONCLUSION

I have endeavored to discuss briefly some practical points in the treatment of five infectious diseases in children—pneumonia, bacillary dysentery, tetanus, meningococcic meningitis, and diphtheria.

## S U R G E R Y

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### "THE DIAGNOSIS AND TREATMENT OF GENERALIZED OSTEITIS FIBROSA WITH HYPERPARATHYROIDISM"

Within the past few years there has been recognized what is apparently another definite endocrine disturbance—hyperparathyroidism. The parathyroids are small glands generally four in number, situated on the capsule of the thyroid gland. They are difficult to recognize unless one is familiar with their appearance; their position is variable. For a long time little was known about them until it was demonstrated that their removal resulted in tetany. About 1908 MacCallum showed that the tetany could be controlled by the administration of calcium. Beyond this our knowledge of the parathyroids increased little until recently.

There has been reported a number of cases of generalized osteitis fibrosa associated with a parathyroid tumor. There is a great deal of evidence to support the view that the bone disease is caused by hyperparathyroidism. In these cases there is a generalized rarefaction of the bones. There is commonly a number of cyst-like areas, so that spontaneous fracture is characteristic. The symptoms consist of pains and aches in the limbs with muscular weakness and wasting.

In hyperparathyroidism the blood calcium is usually high—14 mg per 100 cc. Quite characteristic is a negative calcium balance—on the average diet the patient will excrete more calcium than he takes in. While the blood phosphorous is generally low, no marked changes

have been noted in the phosphorous metabolism. The findings are practically the opposite of those of the tetany of hypoparathyroidism.

The removal of the parathyroid tumor is followed by pronounced clinical benefit. The bones gradually resume their normal density and structure. The general condition of the patient improves. The immediate effect is a decided fall in the blood calcium. Not infrequently this is accompanied by a temporary state of tetany which is easily controlled by parathormone and calcium. The body stores calcium instead of excreting it.

From the foregoing it appears that hyperparathyroidism is a definite endocrine disturbance and that it is the cause of generalized osteitis fibrosa. Should this be so, a condition of generalized osteitis fibrosa would warrant an operation upon the parathyroid glands, tho no tumor could be demonstrated on examination. In the present state of our knowledge, a condition of hyperparathyroidism should be proven before operation is undertaken.

In the British Journal of Surgery 20:479, January 1933, R. C. Elmsie et al give a very good discussion of the subject with a report of three cases of generalized osteitis fibrosa with hyperparathyroidism, and one case of multiple cystic disease of bones without hyperparathyroidism. In the three cases a parathyroid tumor was found and removed. The osteitis fibrosa cleared up following the operation. In the fourth case no tumor was found and no benefit accrued from the operation.

## TUBERCULOSIS ABSTRACTS

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No. 6

Tuberculosis in the American Negro with its high mortality rate is an urgent problem. The literature dealing with this subject has much to say as to the presence or absence of a racial susceptibility of the Negro to this disease. Many of the theories advanced, however, rest on conjectural rather than factual evidence, and there is a notable lack of definite clinical and pathological data.

Pinner and Kasper compared and reported the postmortem findings in 303 Negro and 219 white patients dead of tuberculosis. The study not only points out certain significant differences between the two races, but also throws light on the pathogenesis of tuberculosis in general. An abstract of the article follows:

### TUBERCULOSIS IN THE NEGRO

The authors were impressed by apparently significant differences between colored and white patients dead of tuberculosis and decided to replace their impressions by carefully collected data. It has been shown that the most significant factor in the development of tuberculosis is the propagation of lesions within the body, and that one of the most important and probably the only definitely established fact about immunity is the diminution of spread of reinfecting bacilli in a sensitized organism as compared with a non-allergic one. A comparison of white and colored patients dead of tuberculosis as to the relative frequency of lymphatic and haematogenous spread (paying particular attention to the type and extent of metastases) was deemed to be of value in that it would indicate with fair reliability the degree of resistance during life. Some of the more notable findings are as follows:

#### *Miliary Tuberculosis*

Miliary tuberculosis was found at least twenty per cent more frequently in the Negro in every decade of life up to 50 and this is believed to be indicative of a low level of resistance. However, since on the other hand it

may indicate nothing more than a mechanical accident, all cases of miliary tuberculosis are excluded from further consideration, and the remaining data deal with 190 Negroes and 185 whites.

#### *Haematogenous Spread*

Pointing out that the absence of metastases does not mean that blood stream invasion has not occurred but may rather denote the degree of resistance (specific or non-specific) to such spread, the authors observe that haematogenous propagation occurs twice as often in the Negroes as in the whites, only grossly visible lesions being taken into account.

#### *Lymphatic Spread*

From the point of view of resistance, spread via the lymphatics regularly occurs following first focalization and indicates presumably that state of resistance which is characteristic of "virgin soil."

Eliminating all calcified foci in lymph nodes since they might be part of the primary complex and taking into consideration only grossly visible lesions, spread via the lymphatics occurred nearly seven times as frequently in the colored as in the white group.

#### *Isolated Phthisis*

In contrast to the foregoing is the occurrence of isolated phthisis or tuberculous disease of one organic system with no evidence of involvement of distant organs, and which would presumably indicate a high degree of resistance.

This type of lesion was present in nearly half the white patients and less than 3 per cent of the Negroes.

#### *Duration of Disease*

This information which was available for 96 whites and 47 Negroes gave a total average for Negroes of 324 days and for whites 995 days.

The authors were aware that the nature of their material (postmortem) imposes limitations, since the differences noted between the

two races are probably more pronounced on the postmortem table than in a sanatorium, and more definitely there than in an ambulant clinic. Nevertheless they feel that the material presented justifies some rather definite conclusions. In summary they find that the differences between Negroes and whites are as follows:

"The Negro shows much more frequently haematogenous and lymphogenous spread after a definite focus of tuberculosis is established; this tendency is indicated, too, by the fact that miliary tuberculosis is greatly more frequent in the Negro at all ages. His foci are more frequently exudative in nature, they are more frequently massive, and more often surrounded by collateral infiltrations or haemorrhagic zones. The most conspicuous of the differences is the much greater tendency to lymphatic involvement. The Negro exhibits at times a predominantly lymphatic involvement, which is an exceedingly rare occurrence in white adults. A generalized nodular tuberculosis occurs in some instances in Negroes which is hardly ever seen in whites. In addition, tuberculous lesions in the Negro perforate more often than in whites."

These pathological peculiarities in the Negro are submitted as proof of a diminished resistance.

#### *Various Theories Analyzed*

Several writers have offered explanations to account for the lower resistance of the Negro:

*a) It is said that the Negro, having been in contact with tuberculosis for a much briefer time than the white has not as yet had an opportunity to acquire the same measure of "inherited immunity."*

The authors reply that this stands on unsafe ground since a true inheritance of acquired immunity has never been demonstrated.

*b) It is said that the Negro escapes childhood infection more frequently than the*

*whites; therefore, an infection acquired later in life occurs in virgin (non-allergic) soil and produces rapidly progressive "childhood type" tuberculosis.*

The authors point to the results of large surveys, notably those of Opie and Aronson, which indicate clearly that this theory must be abandoned.

*c) It is alleged that the apparent differences are due to environmental conditions and to the mental attitude of the Negro in regard to disease.*

The authors comment that undoubtedly the greater opportunity for infection in crowded, unsanitary quarters from many undiagnosed cases of open tuberculosis is probably one of the most important factors causing the high tuberculosis incidence in the Negro, but it is difficult to see how environmental conditions contribute to the qualitative peculiarities in Negroes. When unfavorable living conditions in Germany sent the tuberculosis mortality soaring, no reports came forth to tell of qualitative changes in the course and in the anatomical character of the disease.

*d) It is suggested that there exists a true racial difference between the two races, which confers high resistance on one and low resistance on the other race.*

This hypothesis recommends itself strongly to the authors because of the apparent impossibility of explaining the matter by any other alternative, and while this does not constitute proof, it seems at the present time the logical postulate and further studies should show whether it can be converted into an actual fact.

They would deplore violent attacks against such a theory on the ground that its acceptance might paralyze campaign measures now in use.

*Pathological Peculiarities of Tuberculosis in the American Negro, Max Pinier and Joseph A. Kasper, Am. Rev. of Tuberc., Nov. 1932.*

## GASTRO-ENTEROLOGY AND PROCTOLOGY

By W. T. Brockman, M.D., Greenville, S. C.

### HEMORRHOIDS

The Injection treatment has become a recognized method of curing hemorrhoids. The simplicity or apparent simplicity of technique offers a wide field for its use. The chief points to remember are that not all Piles can be injected and not all of the patients who come to the physician with a diagnosis of piles are sufferers from this malady. Most patients call every type of recent ailment "Piles" from painful ulceration to complete prolapse of rectal mucosa.

A few of the major points for the general practitioner to remember are:

1. The more protrusion of internal tumors at stool the easier injected.
2. That pain following stool is a contraindication to injection, and is symbolic of infection as ulceration or thrombosis.
3. Bleeding hemorrhoids respond as a rule to injection.
4. Any growths in form of polyps, or hypertrophied papillae as a rule contradict injection.

5. Tight sphincter muscles contradict injection, and generally indicates infection in anal crypts or ulceration.

6. Injections should not be made in the presence of an acute dysentery or diarrhoea.

7. It is a good rule to insert a gloved finger and palpate for the presence of any indurated or fibrous tissue.

8. It is very difficult to inject a patient that has been treated previously by injection, because of the fibrosis.

9. Injections given very low are apt to produce much pain and a straining desire, causing strangulation and thrombosis.

10. From four to six injections are sufficient for the average case. These to be given from three to seven days intervals.

11. Small injections re-act more favorably to most patients. That is from 1 to 1 1-2 cc.

12. Eight per cent Phenol in Oil of sweet Almonds is my favorite solution. Altho, a five per cent solution of Quinine & Urea Hydrochloride has its advantages.

## SOCIETY REPORTS

PROCEEDINGS OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, WHICH WAS HELD AT ROPER HOSPITAL TUESDAY EVENING, MAY 9th.  
1933, AT 8:30 O'CLOCK

The meeting was called to order by the President, Dr. D. L. Maguire.

Present: Doctors: A. E. Baker, Jr., Banov; Beach; Burn; Cannon; Chamberlain; Culbreath; Deas; Heidt; Hope; Jenkins; McCrady; Maguire; Martin; Moore; O'Driscoll; Pearlstine; F. R. Price; Prioleau; Rudisill; Rutledge; W. H. S. Speisegger; E. W. Townsend; J. F. Townsend; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr.; R. Wilson, Jr.; Zerbst.

Guests: Dr. Max Hemingway, of the Medical College, and hospital interns.

The minutes of the meeting of April 25th were read and confirmed.

The President submitted the following report, in regard to the Alston Bequest:

May 1, 1933

On this date, Mr. Arthur Young and Dr. Daniel L. Maguire called at the South Carolina National Bank and opened lock box 299, which contained United States Liberty Bonds amounting to thirteen thousand, seven hundred and fifty dollars (\$13,750) and which represented Alston Bequest to the Medical Society of South Carolina. The coupons were clipped, amounting to two hundred and ninety-two dollars and seventeen cents (\$292.17) and were turned over to Dr. Daniel L. Maguire to be given to Dr. G. McF. Mood, Treasurer of the Board of

Finance, Medical Society of South Carolina.

Arthur R. Young

D. L. Maguire, President

Medical Society of S. C.

Received from Dr. Daniel L. Maguire, President of the Medical Society of South Carolina, two hundred and ninety-two dollars and seventeen in 4th Liberty Loan Bonds Coupons, Alston Bequest.

G. McF. Mood, M.D., Treas.

Board of Finance

Med. Soc. of S. C.

Under Unfinished Business, the President appointed the following committee to investigate the possibility of the Society's issuing a bulletin: Dr. J. I. Waring, Chairman, Dr. Paul W. Sanders and Dr. P. G. Jenkins.

The Scientific Program was called at 9:00 P. M.

Under Case Reports, Dr. Henry Deas reported a case of brain tumor. This was discussed by Dr. O. B. Chamberlain.

Dr. Chamberlain then reported a case of hemiplegia with choreiform tremors in paralyzed arm, from thrombosis in the globus pallidus. This was discussed by Drs. Rutledge, Martin, O'Driscoll and I. R. Wilson.

The Program Committee had prepared a Symposium on Diseases of the Eye, Ear, Nose and Throat. The following papers were read:

Dr. G. H. Zerbst, on Nasal Diathermy.

Dr. R. M. Hope, on Tracheal Injury; discussed by Drs. Rutledge, Pearlstine and Prioleau.

Dr. J. F. Townsend, on Prevention of Mastoiditis. This paper was discussed by Dr. P. G. Jenkins and Dr. F. R. Price, the discussion being closed by Dr. Zerbst.

There being no further business, the meeting adjourned.

W. Atmar Smith,  
Secretary.

**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, MARCH 28th,  
1933, AT 8:30 O'CLOCK**

The meeting was called to order by the Vice President, Dr. Olin B. Chamberlain.

Present: Doctors: A. E. Baker; A. E. Baker, Jr.; Beach; Beckman; Boette; Bowers; A. J. Buist; A. J. Buist, Jr.; Burn; Cain; Cannon; Cathcart; Chamberlain; Culbreath; Deas; de Saussure; Hope; F. B. Johnson; Lynch; McCrady; Martin; O'Driscoll; Pearlstine; Peeples; F. R. Price; Prioleau; Rhame; Rudisill; Rutledge; Sams; Sanders; Scott; W. A. Smith; W. H. Speissegger; E. W. Townsend; J. F. Townsend; Waring; I. R. Wilson; I. R. Wilson, Jr.; L. A. Wilson; R. Wilson.

Guests: Dr. J. R. Young, President of the South Carolina Medical Association; Dr. F. A. Hines, Sec-

retary of the South Carolina Medical Association; Dr. E. A. Hines, Jr., Dr. Carroll and Captain Thompson, U. S. N.

The minutes of the meeting of March 14th were read and confirmed.

The Secretary read a letter from Mr. F. C. Bates, Superintendent of Roper Hospital, inviting the members to attend the meetings of the Tri-State Hospital Conference which would be held in the city of Charleston on April 5th, 6th and 7th. Mr. Bates also asked the members to cooperate with him in entertaining the city's guests on this occasion. This was received as information.

The Secretary also read a letter from Dr. C. D. Boette, of the American Tobacco Company, stating that he had arranged for the inspection of the cigar company's plant on April 5th, at 2:30 P. M. He stated also that if the members could not come at that hour he would arrange an hour to suit them. This also was received as information.

The Secretary stated that he had received a letter from Dr. C. B. Woods requesting that his resignation as a member of this Society be accepted. The Secretary moved that in view of the fact that he had received the letter some time ago, and that it had been misplaced, that Dr. Wood's resignation be accepted as of January 1st, 1933. This was seconded and carried.

The Scientific Meeting was called at 9:00 P. M.

Dr. Edgar A. Hines, Secretary of the South Carolina Medical Association, was appropriately introduced by the acting president. Dr. Hines delivered an informing address on the life and services of Dr. Wesley C. Norwood, of Cokesbury, South Carolina. He also showed a slide of the monument erected to Dr. Norwood by the South Carolina Medical Association and exhibited some publications of this physician.

On the completion of Dr. Hines's address, Dr. J. R. Young, President of the South Carolina Medical Association was presented to the Society. Dr. Young, after expressing his appreciation of the invitation to address the Society, and pointing out some of the high lights of the approaching State Medical Association, read an able paper on "The Appraisal of Gall Bladder Surgery." At the request of the essayist, the paper was open for discussion. It was discussed by Dr. Cathcart, Dr. Buist, Dr. Robert Wilson and Dr. Cannon, Dr. Young closing.

There being no further business, the meeting adjourned.

W. Atmar Smith

**PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, APRIL 25th,  
1933, AT 8:30 O'CLOCK**

The meeting was called to order by the President, Dr. D. L. Maguire.

Present: Doctors: A. E. Baker, Jr.; Beach;

Beckman; Boette; Burn; Cannon; Culbreath; W. H. Frampton; Heidt; Jackson; Lynch; McCrady; Maguire; Mood; Moore; O'Driscoll; F. R. Price; Prioleau; Rhame; W. M. Rhett; Rudisill; Sams; Scott; W. A. Smith; W. H. Speissegger; E. W. Townsend; J. F. Townsend; Waring; Whaley; I. R. Wilson; Robert Wilson. (31).

Guests: Dr. Edgar Thompson and Dr. Sargent, of the U. S. Navy, and Dr. Blackburn, of Marion, S. C.

The minutes of the meeting of April 11th were read and confirmed.

The Secretary reported that the application of Dr. Robert Wilson, Jr., had been favorably passed upon by the Board of Censors. The President directed that ballots be taken, and Dr. Wilson was unanimously elected a member. The President directed the Secretary to inform Dr. Wilson of his election and request that he be present at the next meeting to sign the constitution.

Under Reports of Officers and Committees, Dr. J. S. Rhame, Chairman of the Delegates to the State Medical Association, submitted the following report:

Mr. President and Gentlemen:

A meeting of the following was held in the Medical Society Room at Roper Hospital on Monday afternoon, April 17th, 1933: Doctors Rhame, Chamberlain, Bowers and W. A. Smith, elected delegates, and Dr. Cathcart, ex-officio delegate; Doctors Prioleau and Martin, alternates.

Dr. J. Sumter Rhame was appointed Chairman and Dr. W. A. Smith Secretary.

Due to the illness of Dr. J. J. Ravenel, Dr. W. H. Prioleau replaced him as a delegate.

A preliminary discussion was held as to the attitude of the delegation in regards to certain matters which, it was assumed, would be proposed at the State meeting. It was decided that the delegation support the nomination of Dr. J. H. Cannon as Councilor and the candidacy of Dr. William Eggleston as president-elect should his name come before the society. It was also decided that in view of the political upheaval in regard to the State Board of Health that the delegation would exert its efforts to maintain the present status of the board.

All of the above-named delegates were present at the opening of the meeting which was held at the Cleveland Hotel in Spartanburg, S. C., on the evening of April 18th, 1933.

Routine business of the house of delegates was handled and reports received.

Dr. J. T. Taylor, whose term as medical examiner had expired, was re-elected.

Dr. J. H. Cannon was re-elected Councilor.

Dr. William Eggleston was elected President-Elect.

The meeting of the house of delegates was a harmonious one and no matters of any particular interest were discussed.

Dr. Robert Wilson of Charleston, on invitation, gave a discussion of the "Report of the Committee on the Costs of Medical Care."

The next meeting is to be held in Charleston, by invitation of your Society.

Respectfully submitted,

J. Sumter Rhame, M.D.,  
*Chairman.*

W. Atmar Smith, M.D.,  
*Secretary.*

The report was discussed by Dr. Robert Wilson and Dr. K. M. Lynch.

The Treasurer reported that the finances of the Society were low, and he did not have enough money to completely pay the dues of the State Medical Association. He urged that the members pay their dues as soon as possible. The President also stressed the necessity of paying the dues.

The Scientific Meeting was called at 9:00 P.M.

The Program Committee had arranged a Symposium on Tuberculosis.

Dr. M. W. Beach made a clinical demonstration of three cases of the childhood type of tuberculosis. Dr. Rudisill collaborated in demonstrating the x-ray films.

Dr. J. I. Waring read a brief paper and gave a discussion of the value of the Tuberculin Test. He also gave a demonstration of reactions to the tuberculin test.

Dr. W. A. Smith read a paper on methods of control of pulmonary tuberculosis.

Dr. Robert Wilson gave a brief address on pulmonary tuberculosis.

These papers were discussed by Dr. Edgar Thompson and the discussion was closed by Dr. Wilson and Dr. Smith.

There being no further business, the meeting adjourned.

W. Atmar Smith,  
*Secretary.*

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# The Journal of the

## South Carolina Medical Association

VOL. XXIX.

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NO. 7

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## EDITORIAL

### STATE AND COUNTY COMMITTEE ON ECONOMICS

#### *Richland Resolutions*

At the Spartanburg meeting President J. R. Young in his address to the House of Delegates recommended that a State Committee on Medical Economics be appointed with powers to confer with similar committees appointed by County Medical Societies to the end that a more satisfactory adjustment be sought particularly in the care of the indigent sick in the various counties of the State. In fact all matters connected with the many problems of medical economics now engaging the attention of the profession and the public may well come within the jurisdiction of this committee.

The personnel of the State committee is as follows:

- Dr. J. W. Jersey, Chairman, Greenville.
- Dr. Robert Wilson, Charleston.
- Dr. Adams Hayne, Columbia.
- Dr. J. Moss Beeler, Spartanburg.

Dr. Douglas Jennings, Bennettsville.

All correspondence or inquiries may be addressed to the Chairman of this Committee.

Quite a number of County Medical Societies have appointed committees and taken some action with reference to some of the problems before the profession of an economic nature but the Columbia Medical Society has recently adopted a very comprehensive set of resolutions worthy of careful consideration on the part of not only the constituent societies in South Carolina but by medical societies anywhere in the United States. In other words, these resolutions point out very clearly that every phase of the care of the sick should be under the direct guidance and consideration of organized medicine. We believe this to be a sound fundamental principle and at the present time of pre-eminent importance. These resolutions will be transmitted to all the medical societies in the state. They are as follows:

After careful study, we wish to offer the following resolutions:

Due to the fact that the Practice of Medicine is a highly scientific art and the care of the sick and wounded is a responsibility devolving on organized Medicine;

Be it Resolved that all plans looking to the cure and prevention of disease or the surgical care of the sick or wounded in Richland County be submitted to the Columbia Medical Society for its approval so that complete, intelligent cooperation can be obtained and the best interests of the patients, the public, and the physicians safeguarded;

Be it further resolved that a standing Committee on Economics, consisting of three (3) members, be appointed to study all plans that contemplate the use of the practitioners of organized medicine, and that this Committee report its findings to the Society for its action.

H. W. Rice  
H. H. Plowden  
Floyd D. Rodgers

May 22, 1933.

#### PICKENS SOCIETY MEETING

One of the outstanding events each year is that of the annual meeting of the Pickens County Medical Society at the mountain home of Dr. J. L. Valley. This year the meeting was held on July 5 under the Presidency of Dr. J. L. Bolt. These meetings, not only constitute a scientific event but the picnic dinner provided by the Woman's Auxiliary to the Pickens County Medical Society adds tremendously to the enjoyment of the occasion. The scientific program is conducted as a rule on the piazza fronting the beautiful lake and is punctuated at intervals by the skillful maneuvering of various and sundry fish to the delight of the august assembly. The essayist of the occasion Dr. J. C. Pepper read an admirable paper on "The Diarrheas of Children." Secretary Valley reported some rare clinical cases. The Secretary of the State Medical Association was present and delivered an address on the recent meeting of the American Medical Asso-

ciation at Milwaukee. Dr. R. E. Abell, President of the State Medical Association, was detained by a conflicting engagement much to the regret of every one present. No Society in the State can boast of a more loyal membership and of better programs from an all around standpoint than the Pickens County Medical Society.

#### ANDERSON COUNTY SOCIETY MEETING

The summers are never too hot for the Anderson County Medical Society to function regularly. The Secretary-Editor was invited to meet with them on July 12 at the Calhoun Hotel and to deliver an address on the doings of the American Medical Association. The essayist gave a brief resume of the history of the American Medical Association tracing its extraordinary growth and power from the early days to the present time. The meeting recently held at Milwaukee was outlined in detail giving a clear cut account of the proceedings of the House of Delegates, particularly as bearing upon medical economics and the relationship of the private practitioner thereto. The Anderson County Medical Society is going right ahead with plans for bringing about better economic arrangements for the care of the sick as suggested in another editorial in this issue. The Society under the Presidency of Dr. J. L. Gray with the very efficient Secretary Dr. D. J. Barton to assist him maintains a splendid record in every way. They have a large membership with quite a number of highly trained young men locating in the County in recent years. One great stimulus for the medical profession of Anderson is the admirably equipped County Hospital. They have just completed one of the finest nurses' homes to be found anywhere in this section of the South. The County Society meets at midday monthly and usually a dinner follows which gives the membership an opportunity for much needed social contact thus promoting good fellowship.

## ORIGINAL ARTICLES

### \*THE TREATMENT OF GONORRHEA IN THE MALE FROM THE STAND- POINT OF THE GENERAL PRACTITIONER

By James D. Whaley, M.D., Charleston, S. C.

The general practitioner today is treating fully ninety per cent of male gonorrhreal patients, and an inquiry among them, as well as others doing more special work, reveals that the disease has decreased little, if any, in frequency during past several years. The most responsibility for this, therefore, rests among those who treat the vast majority of cases, and I hope that the remarks that I will make as regards the treatment of this disease will be of some assistance to you.

The physician can make no greater mistake than to consider all urethral discharges as gonorrhreal, therefore, one must be able to use a microscope so as to properly examine the discharge as well as prostatic and seminal vesicular secretions when the occasion arises. Lack- ing this, he should not marvel as to the variable results he may obtain.

There are many present who have seen so much gonorrhea during their years of practice and have been able to do so little with it that they have become very pessimistic and even consider the condition incurable.

Gonorrhea in the male is somewhat of a self-limited disease which can be greatly benefited, and a cure hastened by gentle judicious treatment, and undesirable complications avoided. If attacked too vigorously, one soon learns by experience that "Trauma has no place in the treatment of gonorrhea." I do not advise abortive plans of treatment for the general practitioner, feeling that he will not be gratified with his results.

All initial attacks of gonorrhea begin at the meatus as an acute urethritis which only too easily extends throughout the urethra, produc- ing an acute anteroposterior urethritis, and

when this occurs, complications, one after another, may set in so that in a single case, one may see practically the whole story pictured, including a chronic gonorrhea.

The treatment of gonorrhea requires much patience and persistence, and one should not be discouraged if his results are not as brilliant as those noted in the medical literature, for I know of no medical subject wherein one is more tempted to unintentionally exaggerate re- sults than in this condition.

The world has long waited for a specific for gonorrhea, but it has not been forth-coming. No disease has been attacked by more varied drugs, and to even mention some of them would require too much time, therefore, from the practitioner's standpoint, I will only mention in the treatment, those that the majority of uro- logists use with virtually the same results.

I see no reason to take much time to discuss the infectiousness of gonorrhea, but every pa- tient should be cautioned about transmitting the disease to his eyes or by the careless use of towels, etc., to innocent children. We must also insist on local cleanliness.

Other factors worth mentioning are diet, sexual hygiene, and the like. As regards diet, we have been too rigid and our patient may even undernourish himself. Insist that he avoid alcohol in all forms and partake sparingly, if any, of highly seasoned foods. Water in large quantities is beneficial, provided blad- der symptoms do not exist.

All straining work should be avoided and no unnecessary exercise taken as statistics show gonorrhea of shorter duration in office workers than in those engaged in hard manual labor. A well fitting support for the testicles is a very worthwhile investment for any patient and should be worn at all times.

A combination of oral and local treatments has always given the best results. Orally an alkali, antispasmodic, sedative mixture is very beneficial, however ten minims of oil of sandal- wood three times a day after meals works as

\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 19, 1933.

well as anything for controlling the subjective symptoms that arise.

Locally, the silver salts, especially the mild and the strong protein give the best results and are used by the majority of urologists with or without irrigations of weak potassium permanganate solutions. Good drainage is essential and the meatus will quite often have to be divided. If the infection has involved the posterior urethra, heralded by frequency, urgency and often a terminal hematuria obviously anterior, injections are useless and often do harm. Anteroposterior irrigations likewise make for complications when employed during the acute stages, therefore at this time no local treatment should be used and the fluid intake restricted to allow more rest for the parts.

When only the anterior urethra is involved, we have a brighter outlook for often posterior extension does not occur and quicker and better results are had. Daily injections, on a clean canal, of about five cubic centimeters of a five per cent mild silver protein or one-fourth per cent of the strong variety, are often enough as too frequent injections often do harm. Should either of these be found irritating, still weaker solutions should be used. This injection is made by the physician at his office and not by the patient, for the less treatment that is entrusted to the patient, the better the results will be. The patient must be seen every day or else he will be inclined to take his disease too lightly. Astringent injections should never be used in acute gonorrhea, as their use always delays cure.

The two glass test as described in our text books is an invaluable guide to the progress of the disease and should the second glass of urine remain clear throughout the disease, ideal results are obtained in about six weeks, as by that time the discharge has ceased and treatments can be reduced to every other day.

A prostatic message should be done and if the secretion is free of pus microscopically, and it usually is when there has been no posterior involvement, one should then within the next week gently pass a twenty five French sound well down into the anterior Urethra to stir up infection that may be dormant. There is no indication to go farther, as only harm can result should the infection still be present and poster-

ior extension occur. If pus recurs, continue treatment locally and when it has ceased for two weeks, then try the sound again and if no discharge reappears after the use of even larger sounds, within the next ten weeks, the patient can be discharged and told to resume usual modes of living.

As previously stated when antero-posterior Urethritis develops, all local treatment is to be discontinued and resumed only when acute symptoms have subsided. Warm antero-posterior irrigations of one to five thousand solution of potassium permanganate, or weaker if irritation results, using very low pressure and at daily intervals, if well tolerated, in conjunction with prostatic massages at five day intervals, give best results. The prostate must be massaged very gently until you know how the patient reacts, then more effective massages can be given. Rough and unskilled massages make for epididymitis and delay cure. One must always bear in mind that the prostate becomes infected in every case of posterior Urethritis and that this infection is responsible for easily ninety per cent of all cases of chronic gonorrhea.

When the urines have cleared up and no acute symptoms exist one must again resort to sounds to see if the patient is free from his infection. It is not wise to pass the first sound to the bladder as too severe a reaction may occur, therefore, using gentleness, introduce a twenty five French sound to the bulb, if no reaction in five days, then the sound can be introduced to the bladder. There should always be some mild antiseptic in the bladder for the patient to void after either sounding or massage, as infected material squeezed out into the canal may do harm unless immediately washed out. Alternating sounds and massages at five day intervals, one should continue, if all goes well, until at least a thirty French is passed without reaction. The prostate will have to be massaged for a longer period of time until the secretion shows only a few discrete pus cells. A little liberty sexually, provided the patient does not overdo himself, is beneficial and will help to clear up chronic infections in the prostate as better evacuations result than from massages.

Acute prostatitis occurs with every acute

posterior Urethritis and the application of heat locally is always beneficial. No treatment other than this should be attempted or else an abscess may result with an acute retention of urine necessitating objectionable catheterization and occasionally incision and drainage. When acute symptoms are over, gentle massages are indicated, and the treatment that of chronic prostatitis.

Epididymitis leads the list in complications necessitating total disability. The best treatment for this is to immobilize the parts by a tight adhesive strapping or homespun spica as soon as it occurs. Many patients are so promptly relieved by this that they can be up and about their work. Others find that only a few days in bed are necessary. An operation for drainage rarely will be necessary as extensive suppuration rarely occurs in gonorrhreal infections. After local symptoms have subsided the support is removed and a jockey strap worn for two weeks, this to be then discarded in favor of suspensory bandage.

Arthritis occurs fortunately rarely, and seldom suppurates. It is best handled by immobilization and mixed gonorrhreal vaccines or injections of sterile milk and the like given. After the swelling subsides and tenderness is reduced to a minimum, gradual motion should be instituted. The local focus of infection is of course treated actively.

Infected follicles are rarely seen unless the meatus is small, allowing poor drainage, or high pressure irrigations are used. Treatment is by massaging against a sound in the urethra and should not be opened externally as a urinary fistula may develop which is frequently very difficult to heal.

Chronic gonorrhea is the aftermath of an acute attack and is treated by treating the causative factor which may be the prostate in ninety per cent of cases. Stricture, too, must be considered as a gonorrhea can never be cured as long as there is a stricture present interfering with drainage. Granulation tissue in the posterior urethra also causes gonorrhea to hang on indefinitely. An infected follicle which may or may not be associated with stricture may also make for chronicity.

Chronic prostatitis is slow to respond to any form of treatment and often too vigorous a

massage results in an epididymitis of an acute exacerbation that further delays a cure. Gentle massages at five day intervals for six weeks followed by a rest period of three weeks and then more massages give best results. Sexual relations as stated elsewhere are beneficial. Before massaging, fill the bladder with a mild antiseptic, one to five thousand solution of potassium permanganate, then if a retrojection of silver nitrate is to be used, pull catheter out gently until fluid ceases to run out, then make instillation of silver nitrate, two to three cubic centimeters of one per cent solution, later increasing strength up to two per cent.

Stricture can best be handled by dilations, aided if necessary by cutting. Dilations should be given at five day intervals using woven silk bougies until a twenty French passes fairly easily, then sounds for the balance. Always use the size below, the same size and the next larger size at each dilation. Never lose sight of the fact that the less trauma that is done, the better the results will be. Operation for stricture, I consider beyond the scope of the general practitioner.

Granulation tissue in the posterior urethra is always associated with prostatitis and massages and retroinjections of silver nitrate are indicated.

Infected sinuses and follicles are very discouraging to treat. Injections of sinuses with a blunt needle using ten per cent silver nitrate will, if persevered with, result in a closure. Infected follicles are best treated by massaging against a large sound in the urethra.

#### SUMMARY AND CONCLUSIONS

1. Gonorrhea in the male is a curable disease.
2. Microscopical diagnosis is essential.
3. Proper drainage by a meatotomy is often necessary.
4. Any chemical that irritates and burns does harm.
5. Trauma has no place in the treatment of Gonorrhea.
6. All local treatment should be stopped during acute stages of anterior-posterior urethritis.
7. Never use anterior-posterior irrigations where only the anterior urethra is involved.

8. Cessation of discharge does not mean that the disease is cured.
9. All chronic Gonorrhea is due to a focus infection that must be properly treated.
10. Always hesitate and think well before you pronounce a case cured.

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### DISCUSSION

Dr. Paul W. Sanders, Charleston:

Dr. Whaley has presented a very complete paper on this subject. There are certain phases of gonorrhea which we never find stressed in our text books. When a patient comes to a doctor, too many times the case is taken lightly and made a joke. We should, however, consider gonorrhea a very serious thing. When you look back on the complications and think of the many patients losing their reproductive powers and the many complications that may ensue later, even to the point of death from bladder and kidney conditions, I do think that when physicians first see the case they should take these fellows into their confidence and make them understand they have a serious condition, that it can be cured, and impress upon the patient not to take his condition too lightly.

I think too much treatment is left in the hands of the patient. Personally, I do not let any of my patients treat themselves unless they live out of town or for some other reason can not return to the office for treatment. I think that the treatment can be done much better by myself or another doctor. It does not matter how intelligent the patient is; once he has a syringe and medicine he is not going to follow your directions.

With reference to the epididymitis, the use of some non-protein injections will relieve the pain and temperature.

Dr. Whaley has so completely covered the subject that there is not very much that I can add. I enjoyed his paper greatly and hope to hear a discussion from some of you other gentlemen.

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Dr. Marion H. Wyman, Columbia:

Several years ago Dr. McKay, of Charlotte, who was the urological editor of SOUTHERN MEDICINE AND SURGERY, the journal of the Tri-State Medical Association, asked me to write something for the editorial column on my office management of gonorrhea—just what I did as a routine for every patient. In doing that I tried to be practical. I started off by saying nothing new had been introduced in the form of drugs except the use of weaker solutions of the drugs, emphasizing the importance of drainage in gonorrhea, as in any other infection. We used to wash out the kidneys with silver nitrate for infection much more often than we do now. Now we establish good drainage, and the same thing is applicable to the urethra. The minute a man comes in and we make a diagnosis of gonorrhreal disease we measure him—measure the meatus. If neces-

sary we cut him the first day, because we want to establish drainage that day. We put the patient on a solution of argyrol, five per cent argyrol, for one week. But we do not give him that to take home with him; we don't give him anything to take home. At the end of the week we put him on through-and-through drainage. We never use a catheter to empty the bladder but just teach him to use the gravity method and use permanganate of potash. Once the prostate is infected, that man is doomed. As for letting the patient treat himself at home, that is bad technic; but after the patient comes to the office for a few days we teach him to mix up the solution himself and let him irrigate his bladder right in our office.

I am sorry that the patients in South Carolina, through their doctors, are missing the benefit of this paper, because it is worth something to the people of South Carolina for the doctors to have been here to hear it.

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Dr. Whaley, closing the Discussion:

I have nothing further to say, except that I do not want to start a urological argument or anything like that. Feeling that we get better results by treating these patients conservatively, this paper which I have prepared for the Association has been a conservative one. I personally try my best to refrain from putting any solid body, even a soft rubber catheter, into the urethra in the presence of an acute urethritis. I never introduce a sound so long as the meatus is edematous and inflamed and there is pus oozing from it.

So far as acute prostatitis is concerned, gentle massage may be worth while, but so many of us are apt to be a little too strong with our index fingers, and too much pressure might be applied and the condition aggravated rather than improved by the massage. So I believe in hot rectal irrigations and other measures and in no local treatment during this stage.

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### \*STRABISMUS—A PLEA

By I. Jenkins Mikell, M.D., Columbia, S. C.

This is in no sense a paper dealing with technicalities. No attempt will be made to discuss the various theories dealing with the etiology of the condition, nor will there be any discussion dealing with the classification of the various types. Neither will there be any discussion of the many various operative procedures which may be undertaken to correct

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\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 19, 1933.

these cases. This paper will deal only with the one type that is most commonly seen, namely, convergent, constant, comitant strabismus or in other words what is commonly known as squint or cross eyes and does not include those cases caused by congenital conditions or by trauma, such as: congenital cataracts, or by birth injuries either intracranial or intraocular. The type squint referred to above constitutes by far the majority of the cases seen, and in fact it includes all the cases with which we are concerned because these are the cases that there is little or no excuse for going uncorrected. The reason we see so many cross eyed people, children, adolescent and adults can be attributed to one of two causes, either ignorance or neglect.

At this point I want to prefer a charge, and to my mind a very serious and grave charge. The blame for all of the cross eyed people we see, child adolescent or adult rests squarely upon the shoulders of the man doing pediatrics, whether he is doing pediatrics as a specialty, or whether he is doing pediatrics as a part of a general practice. The reason to my mind that this is such a grave charge, is not only because of the fact that people that are so afflicted, because of their physical appearance, suffer the torments of the damned while growing up in school and afterwards, nor is it because of the physical discomfort suffered by eye strain, but because of the fact that all of them have only one useful eye as an end result, regardless of what is done later. And believe it or not a one eyed man or woman is at an awful disadvantage, not only because of seeing with only one eye, but in many of the states that have compensation laws it is almost impossible for a man to obtain any kind of employment about machinery unless he has two good eyes. This also holds true for jobs on railroads, the aviation service and many other occupations. And in this high speed era in which we are living, and it tends to become faster every day. I frankly look for the day to come in the near future when a person in order to obtain an automobile drivers license will have to have binocular vision which calls for two good eyes.

As was said in the beginning I will not deal with theories nor technicalities but will simply make the statement that these cases can be corrected and corrected permanently, with the

end result of the patient having two good, useful eyes, without the prospect of undergoing an operation, and without the agony of being made fun of while growing up, which leaves an everlasting impression. This can be done in the type of cases we are discussing, but can be done in only one way. That is that these cases be turned over to a competent ophthalmologist just as soon as the condition is first noticed. (I wish to stress the two words competent and ophthalmologist, and wish to state that they are diametrically opposed to the word optometrist which usually means incompetent.) These cases should be referred immediately whether the child is only eighteen months old or older, whether the condition appears to be an after effect of measles, whooping cough or what not. This should be done at once regardless of the apparent cause. Some people take the attitude that the child is too young for anything to be done except perhaps give it glasses and think that the child is too small to wear them, this is not true, nor is it true, as a great many people believe, that the child will out grow the condition. The proof that this is a mistaken and obsolete idea is seen all about us every day.

When one of these cases is sent to the ophthalmologist, after an examination, he can usually tell whether the condition can be remedied or not. Provided it falls under the heading we are discussing, as has been said before, it can be corrected, and corrected by simply giving the patient the proper glasses after a thorough and painstaking refraction. This sounds like a simple broad statement, but it is not always a simple procedure, but although it may be a difficult, tedious and long drawn out and sometime very exasperating procedure, if the time and care is taken a proper refraction can be done regardless of the child's age.

And regardless of the child's age all other ideas to the contrary the child will wear the glasses and why not, it sees better and consequently is very much more comfortable. The proof of this statement lies in the reaction of the children themselves. The youngest I have had so far was only eighteen months of age, it had a marked squint. With the proper lenses, the eyes not only straightened up promptly, but the mother tells me that the child cries every

morning until the glasses are put on. One of the lenses was broken sometime ago and the child had the family almost in hysterics before the lens was replaced. Another similar case was only nineteen months of age. Numerous people raise the objection that if glasses are put on a young child they will weaken the eyes so that the child will have to wear the glasses all of its life—Again, why not? The glasses will not weaken the eyes, on the contrary they aid eyes that are already weak. And what if the child does have to wear them all of its life, it will have to have them sooner or later anyway. And is it not far better to wear them a few years longer and grow up with not only straight eyes, but two good eyes and binocular vision—than it is to have to put them on later to aid the one remaining good eye and probably have to have an operation to straighten them.

Older children can be straightened by the aid of proper lenses also provided the examination is done promptly as soon as the condition is noticed. That is, if the condition is only of recent acquisition and not one of long standing. One case in my series was seventeen years of age—his squint was only of a few days duration, however, and he straightened out promptly; another similar case was eleven years of age. It is very rare, however, that refraction alone will aid the squint in children of this age unless similar to the ones just cited. But nevertheless they should be refracted and glasses ordered because of the improvement in vision and because of the immediate improvement in their physical well being.

In fact in the treatment of these cases whether operative cases or not, of prime and foremost importance is a proper refraction. Because even though one operates and corrects the very obvious condition unless the causative factor is removed, by means of proper lenses the condition will naturally tend to and very often will recur. And as to refraction, when I say proper refraction, I mean just that. It is impossible, absolutely impossible to do this without the use of atropine. This alone, regardless of many other shortcomings lets the optometrist out. I will not go into any discussion as to prismatic exercises which happens to be a strong point in favor, according to them, of the optometrist. The ophthalmologist is cer-

tainly better prepared and qualified, not only to use, but also to pass upon whether these will be of any value or not, as after all the whole thing was worked out by the ophthalmologists. These exercises are of great value in some cases and absolutely of no value in others.

In the type of case we are discussing unless the condition is corrected early, in order to correct the condition there is nothing left to do except operate in the majority of cases, and may I say that most operations now give very satisfactory results.

I think the point I have been trying to make can be best illustrated by analysing a few cases. This is only a small series, but it illustrates very nicely the points I have tried to bring out. I have seen thirty-three cases in the past eighteen months, one of these was a divergent case so it will not be included, two were paralytic conditions so they will not be included, and five others have had the glasses so recently that they will not be reported. So really we will consider only twenty-five cases.

All of these cases were refracted under atropine. There were seven cases came to operation with an end result seven being corrected, but although the eyes were straightened the vision in the eye that was "crossed" was and will not be aided. In other words all they have is a good cosmetic result. Out of the eighteen remaining nine were corrected by the refraction alone. These nine will not only have straight eyes, but two good eyes and will not have to have an operation. The remaining nine will have to come to operation as well as wear glasses.

Now let us analyze these cases a little more in detail:

#### Refracted and Operated

Cases operated -----	7
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Eldest -----	33
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Youngest -----	10
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Average -----	19
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Corrected -----	7
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Cases Refracted only -----	18
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Uncorrected -----	9
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Eldest -----	28
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Youngest -----	7
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Average -----	16
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Corrected -----	9
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Eldest -----	17-11
Youngest -----	18 months
Average -----	4-6

From what has been said it is evident that only one conclusion can be made, that is that these cases, if seen early, and only if seen early, can be corrected, permanently, without an operation, with an end result of two good eyes, with binocular vision.

So in view of the foregoing I am going to close with the earnest plea that such cases be turned over to an ophthalmologist as soon as the condition becomes manifest.

#### DISCUSSION

Dr. Wm. B. McWhorter, Anderson, S. C.:

Mr. President and Gentlemen,—I have been doing some strabismus work for several years and can appreciate the importance of Dr. Mikell's paper. I wish every doctor in the State could have heard his discussion. The subject of strabismus is a neglected one. The public have little correct information about the matter. The medical profession itself, I am sorry to say, is generally ill informed and either give their patients no advice at all or what is worse advise them wrongly. Even oculists do not give the subject of squint the attention it deserves.

The public are prejudiced against any kind of eye operation. They erroneously think that there is great risk in any simple muscle operation and that blindness may result. On the contrary muscle operations as now performed are practically free of any danger. Furthermore if the eye remains crossed the child will not only carry through life a disfigurement that is a great handicap but will in the end have also a practically blind eye. Regardless of how true these statements may be and regardless also of how enthusiastic the oculist may be, he can not accomplish much until the public are educated. He must have cooperation of the family physician.

I would like to stress the fact that the work must begin early. Most strabismus cases can be cured if the proper treatment is given at the proper time. When I say *cured* I mean not only that the eye can be straightened but also that the vision can be saved and normal binocular vision secured. The eye can be straightened at any age, and it is proper to do this for cosmetic reasons alone, but vision can be preserved only when the treatment is begun early.

I would like to stress the fact that most squint cases have a high refractive error as the underlying cause. A high hypermetropia, myopia or astigmatism is always found except in those rare cases where the squint is due to some congenital malformation of the eye structures or to some disease. Many parents wrongly attribute the child's squint to a fall or to an illness. Ninety per cent of cases are due to a high refractive error. The error is usually higher in one

eye. This results in a blurred image in the retina which refuses to fuse with the image of the other eye. The patient uses the best eye only (except in cases of alternating squint) with the result that the unused eye becomes crossed and in time amblyopic.

The first thing to do in the treatment of these cases is to determine the refraction and if necessary correct the underlying refractive error. This should be done as early as three years of age. Properly fitted lenses and frames will not only greatly improve the vision but may even straighten the eye so that further treatment or operation is unnecessary.

The patient should be kept under observation after the glasses are fitted. The effect of the glasses should be noted. If after a reasonable time the eye is not straight then some muscle operation should be performed. If muscle operation is necessary it should be performed by the sixth year. If not performed by this time useful binocular vision will not be secured and amblyopia may result.

The operation of choice is either retroplacement of the over active muscle or shortening of the under-active muscle. Sometimes in extreme cases both operations are required. Preoperative and post-operative muscle exercises are of benefit.

These cases require painstaking attention but good results can be secured in practically all cases. The reward will be a straight eye with good vision rather than a crossed one that is blind.

Dr. J. W. Jersey, Jr., Greenville:

Dr. Mikell is to be congratulated upon having brought to our attention a very important subject, which, as he has already told you, has been more or less neglected. I have had occasion to bring this same matter up before our own county medical society, and I am in thorough accord with virtually everything Dr. Mikell has said. One of the greatest surprises to me, when I began practicing and doing eye work in the outlying districts, was the fact that the parents of so many of these young children had been advised, often by competent men in the profession, to temporize with the eyes and told not to worry and that it would take care of itself by the time the child started to school. Or, possibly worse than that, they had been told: "Don't take that child to an ophthalmologist; he will operate on him, and it will not do any good." Now, whether or not you know that such remarks are being made, I know it; and I am sure that a good many of you here do know it. I may say that that is a deplorable situation. Too many young children are being allowed to grow up into adolescence with crossed eyes, and not only with crossed eyes but with one blind eye; and it is most important that these patients be handled early and properly. When I say "early" I do not mean, as Dr. Mikell has said, merely at eighteen months; it goes back earlier than that. Something can be done for these children before they are eighteen months of age. It is perfectly true that in some cases a small amount of strabismus is

noticeable in the first few weeks of life. This condition, fortunately, very often rights itself. But if a strabismus is noticed for more than a few months, at most, something should be done for the squinting eyes. In a baby six months of age atropin can be put in the good eye, forcing the squinting eye to work and thereby saving the sight. That is an important point. In prescribing atropin, however, it should be remembered that babies and young children are often very susceptible to it, and a weak solution should be used and the drug not given too often.

In examining children, it is my idea that every school child should be examined under a cycloplegic. A cycloplegic, as you know, of course, is a drug, and no optometrist can use drugs. It is inexcusable, I

think, to tell anyone, and particularly a child, that nothing can be done for him by glasses, unless he has first had proper examination with the retinoscope under a cycloplegic.

Dr. J. L. Sanders, Greenville:

There are two important reasons for the early treatment of these strabismus cases. First, the eye that does not focus, will become amblyopic from nonuse. Second, the optical center of fusion is developed by the seventh year, hence if not corrected before this age, they will never have binocular single vision, which as you know is so essential through the entire life.

(No further discussion)

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

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Does a primary tuberculous infection afford adequate protection against consumption? That is the challenging question asked by Chester A. Stewart in a recent article. He answers in the negative, thereby disagreeing with those who hold that "a little tuberculosis is a good thing." His conclusions are based largely on observations on 84 children, who developed consumption, in a series of more than 10,000 cases examined and followed up at Lymanhurst School in Minneapolis.

### TUBERCULOUS INFECTION

Initial infections with tubercle bacilli are so common that most persons remain ignorant of the fact that they have primary tuberculosis until its presence is revealed by a positive tuberculin reaction. Nonallergic individuals apparently possess a remarkable ability to repair extensive as well as slight damage wrought by a first invasion of tubercle bacilli. Tuberculosis of first infection may be regarded as a benign disease whose prognosis is good and which rarely causes death.

Regardless of how one may interpret the process whereby the body "resists" the first infection by tubercle bacilli, it is important to determine whether this first infection enhances or impairs the normal mechanism of resistance with which man is endowed to combat the disease.

Of the slightly more than 10,000 children examined at Lymanhurst School for tuberculous children during the past decade, 84 were found to have consumption (reinfection pulmonary tuberculosis), classified as follows:

*Group I*—Four children (5 per cent) whose initial examinations were negative but who had reinfection pulmonary tuberculosis (adult type) on reexamination.

*Group II*—Nineteen children (23 per cent) with reinfection pulmonary tuberculosis when first examined but no evidence of primary tuberculosis (childhood type).

*Group III*—Twenty-five children (29 per cent) with primary and reinfection pulmonary tuberculosis coexisting when first examined.

*Group IV*—Thirty-six children (43 per cent) with primary tuberculosis exclusively on first examination in whom reinfection pulmonary tuberculosis later developed.

#### *Analysis of Groups*

No significant conclusions seem warranted on the basis of data available in Group I. The observations made on Group II failed to reveal the sequence of events which led to the condition and therefore failed to contribute evidence for or against the notion that primary tuberculous infection affords protection against consumption.

Group III, however, in which primary tuberculosis was found coexisting with reinfection

tuberculosis provides circumstantial evidence that primary infections frequently fail to prevent the development of phthisis. This evidence is supported by the observations of Group IV, whose records are known with sufficient detail to prove that primary tuberculous infections do not prevent phthisis from developing, and to indicate that first infection by tubercle bacillus alters the normal state of resistance possessed by the uninfected body in such a manner that, instead of again being able to experience the benign form of the disease, the patient is doomed thereafter to have some reinfection type of tuberculosis (consumption and the like) develop, if successfully reinfected.

These thirty-six children, when first seen, gave positive tuberculin reactions, and on roentgen examination their films were normal in nine instances, revealed calcified hilus lymph nodes in fourteen cases, and Ghon tubercles associated with calcified hilus lymph nodes in the remaining thirteen cases. In no instance was evidence of reinfection types of tuberculosis found in this series of thirty-six children co-existing with the primary disease present at the time they were first examined. At that time, therefore, each child in the group had tuberculosis of first infection exclusively, visualized by roentgen examination in twenty-seven cases and not revealed in the remaining nine instances. Subsequently, these thirty-six cases (Group IV) were followed and repeated examinations were made, and after varying periods of observation a reinfection type of tuberculosis (consumption) developed in each child in this group.

A typical case selected from the general group illustrates the development of consumption post-dating and superimposed on a pre-existing primary tuberculosis. A girl with a positive tuberculin reaction and four calcified Ghon tubercles demonstrable by roentgen examination made in 1926 remained in good health for four years, but in 1930 a new sub-apical infiltration appeared on the right. Later this lesion progressed and now, after two years of sanatorium care, hers is classed as a moderately advanced case of consumption. Her multiple protective foci have failed to protect her adequately.

Obviously, the Group IV cases, (43 per cent) provide proof that their primary tuberculous infection *failed to prevent consumption*. This proportion of failures rises to 72 per cent if Group III is included. Lack of detailed information available in Groups I and II explains, the author suspects, why this failure to protect cannot be measured at 100 per cent. Opie, by autopsy found lesions of primary tuberculosis in all cases presenting a reinfection type of tuberculosis.

#### *Reinfection, the Essential Factor*

At Lynianhurst to date, no case proved to be consumptive as a direct result of a first infection, has been found, and no case of a second crop of primary lesions has yet developed in an allergic child. This evidence, together with the observations of Opie, reveals exactly what is needed to become a consumptive, namely, reinfection on tissues previously sensitized by a primary infection. If that is true, artificial immunization with an attenuated organism (BCG) alters the normal status of the uninfected body and creates the danger that a crop of unnecessary consumptive patients may be harvested when the vaccinated children reach puberty, and later. Certainly several years of observation will be required before the value of artificial immunization can be definitely settled.

The term "childhood type of tuberculosis" adopted some years ago by the National Tuberculosis Association is not entirely satisfactory. Would it not be better to designate this type as "primary pulmonary tuberculosis"? Furthermore, the implication of the term "adult type of tuberculosis" is contradicted by the observation that this form of the disease develops in children with appreciable frequency. The term "reinfection type of tuberculosis" is preferable.

The conception of tuberculosis held by the author justifies the advocacy of special protection from reinfection for all children (and adults also) who are allergic to tuberculin, regardless of whether symptoms and primary lesions demonstrable by X-ray are present or absent. A positive tuberculin reaction "does not necessarily indicate disease." Ghon's careful postmortem studies revealed primary tuberculosis lesions in from 90 to 95 per cent of in-

fected children. The usual examination method by roentgenography is not sufficiently sensitive to discover the primary lesion in all cases, but if the tuberculin reaction is positive such a lesion must be, or have been, there. The roentgen study should not, therefore, be accorded too much authority in determining that the individual has or has not primary tuberculosis for that question is settled by the tuberculin reaction. The roentgen examination of positive reactors, he believes, should be made only for the special purpose of determining whether reinfection types of tuberculosis are present or absent.

How should cases of primary tuberculosis be treated? Manifest disease, of course, may require sanatorium care or its equivalent, but for first infection types generally, observation and good hygienic care are all that is needed.

The summer camp provides a pleasant outing for infected children, but nothing of added basic curative value. Admission to a preventorium unfortunately separates a child from home environment, and probably furnishes nothing that could not be obtainable outside a preventorium. Experience at Lymanhurst, which is a day school planned for tuberculous children, discharges its obligation fully without the aid of a sanatorium. Certified homes seem superior to resorting to institutional care. What is needed, in short, is good medical observation, intelligent home care, and school co-operation.

*Does a Primary Tuberculous Infection Afford Adequate Protection Against Consumption?—Chester A. Stewart, Jour A. M. A., Apr. 8, 33.*

## OBSTETRICS AND GYNECOLOGY

R. E. SEIBELS, M. D., COLUMBIA, S. C.

### REPEATED ABORTIONS

Our attention was recently called to replies to physicians in the Journal of the A.M.A. June 17, 1933 in which the editor, in our opinion, gave too prominent a place to the importance of syphilis in the causation of repeated abortions. Indeed it is our experience, amply confirmed by other observers that syphilis plays almost no part in this problem, medical tradition to the contrary notwithstanding.

Twenty years ago before, Wassermann and Kahn tests were accessible, the story of repeated abortions was sufficient ground upon which to give a woman "mixed treatment," it being presumptive evidence that 2 or 3 abortions indicated syphilis. On the contrary it seems to us we find fewer positive Wassermann and Kahn tests among these patients than the general proportion of positives would give us.

A dismally large proportion of these patients defy our best efforts to discover any exciting cause of abortions. Though it is easy to find more or less fanciful explanations based

upon endocrin imbalance, yet certainly treatment along this line has not seemed to us to be on any scientific basis or productive of good result when used empirically.

We have found a fairly good proportion of these patients to be suffering from chronic sepsis and most frequently of dental origin. Thus among 18 patients, with 2 or more spontaneous abortions, 16 showed unquestionable oral sepsis and 3 of these subsequently went to term and normal delivery after clearing up infectious areas. While this may be considered rather thin evidence on which to base the assumption that abortions are caused by the streptococci about the apices of the teeth, it certainly points the way to future study and thought.

Whatever value we may finally assign to dental studies in connection with pregnancy certainly syphilis cannot maintain a very high place as a cause of repeated spontaneous abortions.

Seibels, Robert E.: The Journal of the S. C. Dental Association '23:45 1930.

## SOUTH CAROLINIANA

J. I. Waring, M.D., Charleston, S. C.

The Diagnosis of Malaria by the Thick Blood-Film Method—F. B. Johnson, Charleston. *Sou. Med. & Surg.* 95 Apr. 1933. 185.

The value of this method is discussed. With it, parasites may be readily found even after the administration of quinine. The technique of staining is described.

Some Recent Advances in Surgery of the Sympathetic Nervous System—A. T. Moore, Columbia. *Sou. Med. & Surg.* 95 Apr. 1933. 196.

Increased anatomical knowledge and reliable tests allow selection of cases for which safe operative procedures are available. Alcoholic injection of the ganglia is often helpful. The author speculates concerning the possibility of prevention by surgery of the nervous system, of various diseases such as angina pectoris, cardiorenal disease, etc.

Obstetrics in the Small General Hospital—J. D. Guess, Greenville. *Sou. Med. & Surg.* 95 Apr. 1933. 203.

An analysis of work in the Greenville Hospital. The figures indicate the safety of hospital

care. The author warns against hasty podalic version.

Congenital Hemihypertrophy—Wakefield, E. G., and Hines, E. A. Jr. *Am. J. Med. Sc.* 185 Apr. 1933. 493.

A report of 8 cases of this unusual and obscure condition, which is frequently accompanied by other anomalies. Illustrated.

Surgery and Its Relation to Society—R. S. Catheart, Charleston. *Am. J. of Surg.* 20 May 1933. 204.

The presidential address to the Southern Surgical Association. A review of the development of surgery, and consideration of some of the current problems in the relation of the surgeon to society.

Operative and Non-Operative Glaucoma—J. W. Jervey, Greenville. *Sou. M. J.* 26 Apr. 1933. 330.

Dr. Jervey advises against hasty operation, and names pain, loss of acuity of vision, loss of field, and excessive tension as indications for use of sclero-post-iridectomy, the operation of choice.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "THE USE OF CONTINUOUS INTRAVENOUS INFUSIONS IN ACUTE ABDOMINAL CRISES"

The safest and most satisfactory method of giving fluids and nourishment is by mouth. However at times this route cannot be used on account of some acute abdominal condition such as peritonitis, intestinal obstruction, or intestinal suture. In such conditions more than in normal health is it necessary to supply the body with sufficient fluids, minerals, and carbohydrates. If given by mouth either they are not assimilated or they do harm by increasing peristalsis. Of necessity some other means must be selected.

Proctoclysis is often unsatisfactory and generally uncertain. It has been quite conclusively demonstrated that only water and sodium chloride are absorbed by the large bowel in any quantity. If not irritated at the time, the bowel soon becomes so and the fluid acts only as an enema. This method often increases the discomfort of the patient. It may do harm by increasing peristalsis.

Hypodermoclysis, or subcutaneous infusion, is quite satisfactory for a single administration, especially immediately after a general anesthetic. It is too painful to be used repeatedly. If given twice in the same place the tissues become irritated and absorb the fluid very slowly. If given improperly a slough may result.

Intermittent intravenous infusion has the advantages of being painless and of being able to be used over a long period of time. Its chief disadvantage is that it is not infrequently followed by a febrile chill which may be of serious consequence to an ill patient. If a hypertonic solution is used it will cause a diuresis and thus the body may lose more fluid than it receives. Most probably the intermittent flooding of the system with fluids is not as beneficial as the gradual administration.

A very satisfactory method is that of the continuous intravenous drip. A needle or a cannula is inserted into a vein and a drip bulb is placed between the reservoir and the needle at a distance of 15-25 cm above the level of the heart. The flow is regulated at 20-40 drops a minute. This method can be used for a number of days. It is devoid of febrile reactions. It does not overburden the heart by a rapid addition of fluid to the circulation. Glucose and salts can be added to the solution; also medicines such as insulin and digitalis. Its only real disadvantage is that very commonly after three days a phlebitis develops in the veins in the proximity and edema results. In such a case the needle can be changed to another vein. The phlebitis soon subsides and no permanent damage is done.

This subject is discussed quite fully by I. S. Raudin and C. G. Johnston in the Annals of Surgery 97:749, May 1933.

## SOCIETY REPORTS

### ANDERSON COUNTY MEDICAL SOCIETY

The June meeting of Anderson County Medical Society was held at the John C. Calhoun Hotel, Wednesday—June 14th, 1933 at 12 noon, the meeting was called to order by the president, Dr. J. L. Gray. The minutes of Previous month were read and approved.

Dr. J. B. Townsend read a tribute of memory to Dr. J. C. Harris a late departed member, motion was made that a copy be sent the bereaved family, also copy to county papers and S. C. Medical Journal for publication, this motion seconded and carried.

Under head of business—A report from committee, In regards to working and studying out plans in caring for indigent cases throughout county was made by Dr. J. R. Young, chairman of this committee, he stated that the committee would confer with county authorities in this matter.

Dr. B. A. Henry had charge of Scientific Program, his subject was "Some Thoughts Pertaining to Longevity," this was a very interesting paper.

Luncheon was served by Anderson County Tuberculosis Association at Central Presbyterian Church.

Members present 25. Visitors present 1.

Respectfully submitted,

D. J. Barton, M.D.,  
Secretary-Treasurer.

### DEATH OF DR. J. C. HARRIS

Dr. Harris is dead. These simple words will fill many hearts with poignant sorrow for Dr. Harris had many friends. It is natural that friends should shed a tear at the passing of a friend, it is fitting that the members of his profession should pause for a brief moment in their busy lives to pay their respects to the memory of their dead comrade. So recent is our loss, so keen is our sorrow of parting, so moved are we by our emotions that we find it most difficult to command our words. Dr. Harris was not one to entertain an exalted opinion of himself; he would not be pleased with any fulsome eulogy; he dealt kindly but truthfully with others and would have us deal kindly but truthfully with his memory.

We are not attempting to write his obituary, who were his parents, when and where he was born, what schools he attended, where and how long he practiced medicine what honor his fellow practitioners heaped upon him; he was too well known for us to attempt to draw a pen picture of his lovable personality; we have no heart to critically evaluate his merits or his demerits. Let others record these things. They are of interest, but they are not the things we wish to remember about Dr. Harris. Our mouths speak because our full hearts compel us. Dr. Harris was more than a fellow practitioner to us he was our

friend, our dear friend for over a third of a century and now that there has come a brief interlude in this friendship our only desire is to inter his shortcoming with his bones and to embalm his virtues in our loving remembrance.

Dr. Harris was a friendly man, he was a friend to everybody and everybody was his friend. He had a genius for making friends. He thought in terms of others and not in terms of self. He was not demonstrative or over familiar, but he was quiet and reserved and there was a certain dignity about him which attracted people to him and a certain charm of personality which bound them to him with hooks of steel. While he belonged to the aristocracy of accomplishment he was democratic in his dealings with others. He was easy of approach and had none of the mannerism of the near great.

Dr. Harris was a kind hearted man. Through his entire life there ran a current of underlying kindness. He honored all drafts drawn on his time and talent and in the lexicon of his friendship there was no such word as "no." He was too good for his own good. His kind heartedness manifested itself not only in his willingness to do for and share with others but also by the quickness of his recognition of merit in others and the slowness of his comments on their failures and faults. He was not over aggressive, or domineering or self seeking, but was kind and considerate of the rights and feeling of others.

Dr. Harris was a clean man. He was clean in manners and morals. He eschewed the vulgar, the obscene, the profane. He was one of the few men that a woman could tune in on his conversation without fear of being embarrassed by what she heard. There was no scandal attached to his name, no blots on his escutcheon. He was clean in his work. Although he began the practice of surgery before the era of rubber gloves he acquired a technique for cleanliness which would have done credit to one trained in one of our best modern hospitals. Dr. Harris was a gentle man. He had the strength of a man and the gentleness of a woman. There was nothing rough about him. In the examination of his patients, in his dressings, in his operative work he was a marvel of gentleness.

Dr. Harris was a religious man. Not of the emotional oriental, but of the occidental type, translating his religious tenets into service for his fellow man. "He did justly, he loved mercy, he walked humbly with his God" and the Book requires no more than these.

Dr. Harris was a good physician. His natural ability and his inclination was his call of God to be a surgeon. He had the rarest of all surgical gifts—he knew what not to do and when to quit. He was

a "workman that need not be ashamed." He inspired confidence in his patients, not by what he said but by what he was. He excelled in the art of medicine rather than the science of medicine. What he knew of medicine he gained not from the study of books and magazines, but from the study of his patients. He was a worthy son of Hippocrates, he fought disease, he relieved pain, he turned fear into faith, despair into hope, anxiety into joy and his patients caught the contagion of his pluck and his courage. He never mastered the commercial side of medicine. He was no show man, he was a poor salesman, he did not know how to sell a small service for a large fee or how to squeeze the last cent out of his patients. Naturally he was imposed upon by those small grasping souls who were incapable of gratitude, but this never soured him. He found his happiness in his work and sought no other. The practice of medicine was his vocation and his avocation. For fifty years he responded to every call of need, he wore out in service he did not rust out, and now having labored long and faithfully, he is entered into his rest. Gone to join his old friends and comrades—Dr. Wither-spoon, Dr. Hunt, Dr. Duckworth, Dr. Hutchinson, Dr. Wilbrite and Dr. Shirley, and we, the heirs of his labors, are left to carry on without the stimulus of his presence. Our heavy hearts refuse to admit that the curtains have gone down for the last time upon our friend or our friendship. We know that

"He has passed beyond our view  
But still he is not gone if we are true.  
The lessons taught in passing still remain.  
And to have known him is our endless gain."

"Dear good Dr. Harris—  
Thy day is come not gone,  
Thy sun is risen not set,  
Thy life is now beyond the reach of death or change  
Not ended but begun in God.  
O noble soul; O gentle heart;  
Hail and Farewell.

Committee  
J. B. Townsend, M.D.,  
W. H. Nardin, M.D.,  
B. A. Henry, M.D.

#### MINUTES OF MEETING OF FIFTH DISTRICT MEDICAL SOCIETY

The regular spring meeting of the Fifth District Medical Society was held in York, South Carolina, June 1st at 11 A.M. In absence of the President, Dr. C. A. West, Dr. Dulin of Clover presided.

The meeting was opened with a prayer by Dr. W. W. Harrison. The members were welcomed by John R. Hart in absence of Mayor W. E. Morton. Response to the Words of welcome was made by Dr. R. A. Bratton.

The following program was presented:

1. "Symptoms suggestive of duodenal ulcer arising

from hookworm infection." Dr. J. Heyward Gibbes, Columbia, S. C.

2. "Diarrhea in Infancy." Dr. John Brewer, Kershaw, S. C.

3. "Gastro-intestinal disorders of infancy and childhood." Dr. E. W. Barron, Columbia, S. C.

4. "Buerger's Disease." Dr. W. R. Wallace, Chester, S. C.

At 1:30 P.M. the meeting was interrupted for Lunch which was served by the Ladies of York. Immediately following the scientific session was continued.

5. "Every day problems of Mutual interest to the General Practitioner and Urologist." Dr. Hamilton McKay, Charlotte, N. C.

6. "New Method of Reduction of shoulder dislocation." Demonstration—Dr. D. E. Walker, Rock Hill, S. C.

Following the scientific session a business meeting was held.

Dr. W. R. Wallace of Chester, S. C. was elected President.

Dr. W. C. Whiteside of York, S. C. was elected Vice-President.

Dr. W. J. Henry of Chester, S. C. was elected Sec. and Treas.

Upon an invitation of Dr. C. W. Morrison of Lancaster the Society will hold its fall meeting in that City.

A rising vote of thanks to Dr. John I. Barron of York for acting as Chairman of program committee.

Meeting Adjourned at 3:30 P. M.

Members present 27. Visitors 13.

G. S. Rhame, Sec.

#### ANDERSON COUNTY MEDICAL SOCIETY

The May meeting of Anderson County Medical Society was held at the John C. Calhoun Hotel, Wednesday, May 10th, 1933 at 12 noon. In the absence of President and Vice President the meeting was called to order by Dr. J. R. Young. The minutes of April 12th were read and approved.

First business coming before the society was the report from the committee appointed by the president at April meeting, in regards to a proposed bill introduced in the House to place the State Board of Health under control of Governor, the committee reported that the State Board of Health was to continue under the same control as it had for many years, this report met the approval of the society as a whole.

The delegates to S. C. Medical Association which met in Spartanburg April 18th, 19th and 20th made their report. Dr. J. O. Sanders delegate to S. C. Health Association also made report.

A matter of interest and importance was discussed concerning an insurance plan which might easily be worked out and paid for by county, in regards to taking care of indigent cases, throughout Anderson County. After some discussion Dr. Epting made

motion that a Committee be appointed by the president to make a careful study of this proposed plan and make report to Society. Motion seconded by Dr. Townsend. The following committee was appointed by the president.

Dr. J. R. Young, Chair, Dr. Frank Wrenn, Dr. J. O. Sanders, Dr. E. E. Epting, and Dr. J. B. Latimer.

Motion was made that Anderson County Medical Society extend their thanks to the doctors who rendered their untiring services so graciously to the injured in the tornado district. Motion seconded and carried.

Immediately after the meeting adjourned the society stood with bowed heads for a period of one minute out of respect for our late departed member Dr. J. C. Hraris, who departed this life May 8th, 1933. The following committee was appointed to draw up resolutions concerning the death of Dr. Harris. Dr. J. B. Townsend, Dr. W. H. Nardin, and Dr. B. A. Henry.

Luncheon was served in the hotel dining room.  
Members present 20. Visitors present 1.

Respectfully submitted,

D. J. Barton, M.D., Sec. Treas.

PROCEEDINGS OF THE REGULAR MEETING  
OF THE MEDICAL SOCIETY OF SOUTH  
CAROLINA, WHICH WAS HELD AT ROPER  
HOSPITAL TUESDAY EVENING, MAY 23rd,  
1933, AT 8:30 O'CLOCK

The meeting was called to order by the President, Dr. Daniel L. Maguire.

Present: Doctors: Banov; Beach; Bowers; A. J. Buist; A. J. Buist, Jr.; Burn; Cain; de Saussure; Gant; F. B. Johnson; McCrady; Maguire; Mood; O'Driscoll; Peeples; F. R. Price; J. J. Ravenel; Rhame; Richards; Rudisill; Rutledge; Sams; Scott; W. A. Smith; W. H. Speissegger; Sughrue; E. W. Townsend; U. F. Townsend; Whaley; Robert Wilson; Robert Wilson, Jr. (31).

The minutes of the meeting of May 9th were read and confirmed.

Under Reports of Officers and Committees, Dr. C. McF. Mood, Chairman of the Board of Commissioners, stated that at a meeting of the Board that afternoon a resolution was adopted that he report to the Society the changes brought about by the refinancing of the Hospital appropriation by the County. He then read the following bill, which had recently been enacted by the General Assembly:

Item 25—Roper Hospital

For the care and treatment of indigent patients of Charleston County in Roper Hospital, under the supervision of the Commissioners of the said Hospital the sum of \$72,000.00.

The above amount to be paid out monthly upon warrant of the Chairman of the Board of Commissioners to the Roper Hospital, and after the sworn statement for the previous calendar month, as here-

inafter provided, shall have been filed as required. Any person who is brought to the Hospital for medical treatment as is provided for in this Act, shall be required to furnish to the Chairman of the Board of Hospital Commissioners an affidavit from a freeholder of the County, that said patient is financially unable to pay the cost for such treatment and hospital expenses as herein provided. The Chairman of the Board of Commissioners, at his discretion, however, may admit such patients without the affidavit as above required. It is specifically provided, and this appropriation is conditioned that the amount appropriated in this item shall be reduced by any amounts which may be received by said Roper Hospital, its Commissioners and/or its departments from the City of Charleston, or any of the departments, boards and/or commissions of or under the control of, said City of Charleston except as to water furnished by the City of Charleston or its board, department or commission.

This appropriation is also conditioned that the Chairman of the Board of Hospital Commissioners, or other responsible official of said Hospital designated by said Chairman, shall file monthly with the County Treasurer of Charleston County an itemized statement under oath showing the expenditures in detail of all the amounts and income received by said hospital, or its boards and departments, from this appropriation, and all other sources; and this appropriation is further conditioned that there shall be filed hereunder, by said Chairmen or said responsible official, a statement showing the salaries in detail and the recipients, and the wages or other compensation by categories, in bulk, with the number of recipients of each category, paid; and with each subsequent monthly statement there need be filed only a statement showing the basic salary changes, with the recipients, and/or the basic wage changes, with the number of recipients affected.

Dr. Mood then discussed the present financial situation of the Hospital, pointing out that City Council had directed the Commissioners not to submit a budget for the year 1933; that the Board had been approached by the County Delegation, requesting information as to the amount necessary for taking care of the City and County sick; that the Board had submitted a budget of \$99,000.00. In view of the anticipated shrinkage of income to the Hospital, from its private patients, and from endowments, it was believed that it would be impossible for the Hospital to be maintained in the high scale of efficiency in which it was now running, with these decreases. There are certain things which the Hospital had been doing over a period of years for which no special appropriation had been made. One of these was the burial of the pauper dead. This consists in furnishing the coffins and transporting the remains to Potter's Field. The Hospital has also borne the cost of committing lunatics to the State Hospital. This included a ten dollar fee, payable to the Judge of

Probate, for completion of the proper papers. In separate resolutions adopted by the Board, it was decided that the Hospital would no longer perform either of these functions, and the Board of Health of the City of Charleston was notified about the first, and the Probate Judge about the Board's action in the latter case.

The Board, however, felt that it would be better at this time to accept the appropriation made by the Delegation, letting them know of the financial situation which confronts the Commissioners, and pointing out to them the probability of a deficit. He stated that the Board felt that it would be unwise to in any way lower the standard of efficiency of the Hospital and that they did not propose to permit any deterioration of the physical plant.

Dr. Mood then stated that the following is the text of the resolution adopted by the Board that afternoon:

**RESOLVED:** 1st: That the Chairman of the Board be directed to report to the Medical Society the text of the appropriation bill recently adopted by the Charleston County Delegation, with reference to the appropriation for the Roper Hospital for the year 1933.

2nd: That he state to the Society that the Board would recommend the acceptance of the amount of this appropriation for this year, but that he point out to the Society that the Board will stipulate that certain of the services rendered by the Hospital will necessarily have to be curtailed. That he also state that the Board would write a letter to each member of the County Delegation, directing their attention to the shrinkage of the Hospital's income, as a result in the decrease in the number of private patients and the decrease in the income from endowments. That the Board did not propose to lower the high standard of the Hospital service, nor to permit deterioration of the physical plant, and although every effort of economy will be utilized, it is expected that there will be a deficit at the end of the year, which the Delegation will be requested to make good.

Dr. Mood stated that it was the wish of the Board that a free discussion as to its action should be given, emphasizing that it was the opinion of the Board that the Society accept the appropriation as set forth in the bill. It was moved and seconded that the report of the Chairman of the Board of Commissioners be adopted. This was discussed by Doctors Burn, Rhame, Beach, Maguire, Rutledge, McCrady, and de Saussure, Dr. Mood closing. The question was put and the motion carried.

The Secretary reported that he had been requested by Dr. T. E. Bowers, Secretary of the District Medical Association, to report that the District meeting would be held at St. George on May 24th.

The Scientific Session was called at 9:00 P.M.

Dr. E. W. Townsend read an able paper on sickle cell anemia. That was discussed by Dr. F. B. John-

son and Dr. Beach, Dr. Townsend closing.

Dr. W. H. Speissegger read a paper on purple.

Dr. F. R. Price read a paper on the symptoms in the diagnosis of disease. This was discussed by Dr. O'Driscoll and Dr. Rutledge. Dr. Price closing.

Dr. G. P. Richards read a paper on influenza—an etiologic factor in heart disease.

There being no further business, the meeting adjourned.

W. A. Smith, Secretary.

#### COLUMBIA MEDICAL SOCIETY

The Regular Meeting of the Columbia Medical Society was held at the medical hall on April 10, at 8:30 P. M. Dr. F. M. Durham Presided.

The minutes of the previous scientific meeting were read and adopted.

Dr. Roderick Macdonald presented the first paper of the evening on "The Value of Submucous Resection of the Nasal Septum." In this paper Dr. Macdonald enumerated the indications and value of such an operation. The data from cases operated on was derived from 125 patients at the State Hospital during the past eleven months. The results of these cases proved to be very satisfactory.

The second paper, "The Operative Treatment of Infantile Hydrocephalus," was presented by Dr. Roger G. Doughty. Dr. Doughty presented the anatomical structure concerned in the formation of hydrocephalus. He presented a case of a four months old infant with severe hydrocephalus which first became apparent at two months of age. A block of the intraventricular portion of the cerebro-spinal fluid system was proven by the injection of a dye in the spinal canal and a subsequent ventricular tap, and by the elimination of the dye through the kidney any abnormality of the arachnoid was ruled out. The operation consisted of opening into the lateral walls of the third ventricle through a left temporal incision. This allowed the spinal fluid to escape from the ventricle to the sub-arachnoid space, thereby short circuiting the blocked passage. Such an opening, he said, is permanent. The result of this operation was successful. This paper was discussed by Drs. Dotterer, Josey, Bristow and others. Dr. Doughty closed with a lantern demonstration of the case.

The president announced the appointment of Drs. H. W. Rice, Rodgers, and Pitts to serve on a committee to study "The Report of the Committee on Cost of Medical Care." This committee submitted a report with recommendation. Dr. Harmon motioned to accept the report and recommendations of this committee and this was seconded. Dr. W. R. Barron, Dr. Madden, Dr. Mc. Intosh, and Dr. Harmon took part in this discussion. After a lengthy discussion Dr. Mayer motioned to continue the discussion at a later date. This was seconded and passed.

Benjamin Rubinewitz, M.D.  
Secretary.

## MINUTES

MINUTES OF HOUSE OF DELEGATES,  
SOUTH CAROLINA MEDICAL ASSOCIATION  
Eighty-fifth Annual Session, Spartanburg, April  
18, 19, 20, 1933

TUESDAY, APRIL 18, 8 P. M.

The House of Delegates of the South Carolina Medical Association met in the ballroom of the Cleveland Hotel, Spartanburg, on Tuesday, April 18, 1933, at 8:00 p. m., with Dr. J. R. Young, the President, in the chair.

The meeting was called to order by the President, after which the roll of delegates was called.

PRESIDENT'S ADDRESS  
*Dr. J. R. Young, Anderson*

I have only one address to make, and that will be read tomorrow night. I do want to thank you again for this honor you have conferred upon me. It is a great honor, and I do appreciate it very much. For the past two years I have gone around over the state meeting with medical societies. I have learned to know men I did not know before. It has confirmed me in an idea I had before, that the medical profession consists of pretty good fellows. Doctors have suffered from the depression during the last few years; all of us have; but we have not suffered, as a group, any more than the people whom we serve. I doubt if we have suffered as much. We have not spent a lot of time "bellyaching" about it. We are not proud of it, but we have taken our medicine without saying much about it.

There are two recommendations that I want to make to you men right now. I have attended the meetings of this Association almost every year for twenty-five or twenty-six or twenty-seven years. Many times, I think, the work of this House of Delegates has slowed up and has been unnecessarily prolonged. Dr. Hines has mentioned to me a plan which I believe will help in facilitating the work; that is that we appoint a committee from our number here tonight which will serve as a reference committee, any proposition proposed here to be submitted to this committee. The committee will retire and discuss it fully, then come back in here and give us their appraisal of it. Then the House will consider the matter and act upon it, not necessarily taking the committee's appraisal, but acting upon it on its merits. That plan is followed in the American Medical Association and several state medical associations. Of course, if we met for several days it would have more value; but even meeting only one night, as we do, we think it will be helpful. It is not proposed with the idea of making the meeting any less democratic, but to let these men study the prop-

ositions and give us the benefit of their opinion.

It has also been tried to work out a plan whereby our county health work, as now conducted by county health units, may be very much more closely allied and correlated with the county medical societies, and in addition to doing the usual county health work, our various county medical societies may take steps to do the curative medicine for their respective counties. Now, I do not mean in the gross and in large measure, but I mean for a committee to work out a plan whereby some of the work that is now done by the county physician might be done by the county medical society. The plan is embraced in the report of the Committee on Cost of Medical Care. My proposition is that there be a committee appointed to study this and to confer with and collaborate with similar committees from the various county medical societies who wish to go into it. Now, I realize that this is a departure, and I realize it smacks of "state medicine," if you want to call it that; but I believe it is a good idea to appoint a committee to devise a plan by which these things can be worked out. I think it would be a good thing if the county health work could be more closely allied with the county medical society. The State Board of Health is the State Medical Association, by law; and the state health work is made up of the county health work.

President Young then introduced the President-elect, Dr. R. E. Abell, of Chester.

ADDRESS OF PRESIDENT-ELECT  
*Dr. R. E. Abell, Chester*

I think one of the reasons why you so kindly elected me president was that I could not make a talk, so I am not going to make an address.

While I have no completed plans or aims for the year, there is one thing I should like to start you to thinking about tonight. There is nothing I should rather accomplish during this next year than to do something for our medical school. I have some ideas which will be presented in the Journal later. If you recall, the organization, and the existence of the College for a long time, depended upon the efforts of a very few loyal doctors in Charleston. Having been on the State Board of Medical Examiners for some years, I have been impressed with the fact that if our medical school does not remain a Class-A school just about sixty or probably sixty-five per cent of the incoming doctors will be cut off, because that is where they are coming from. I hope all members of this Association will do everything in their power and will make suggestions that will be of real benefit to the College. I have an idea of

starting an endowment through some life-insurance proposition. I believe if an endowment were started it would very probably be added to by people outside the profession. It occurred to me that if everyone in the Association that could would go into a group and take, say, a thousand dollars in life insurance payable in an endowment fund to the College it would grow to amazing proportions.

I want to take this opportunity to thank you again for electing me to the presidency, and I promise you that I will do the very best I can during this next year to serve you to the best of my ability.

---

REPORT OF THE SECRETARY OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

By E. A. Hines, M.D., Seneca, S. C.

I have been your Secretary for twenty three years and Editor of your Journal for twenty years. At no period in this long experience has there been such momentous problems confronting the medical profession as in the recent past. Even since we met at Columbia last year organized medicine has been called upon to defend itself most vigorously from many sinister onslaughts from many sources. That the call for a defensive attitude will be conducive to a more vigorous organization is the belief of able thinkers both within and without the profession.

For a quarter of a century we have concerned ourselves largely with the machinery of organization until in membership we have assembled in the United States in the American Medical Association of which we are a constituent unit the greatest medical organization in the world, one hundred thousand strong. We are now facing the acid test of our strength. In all the years that I have been your Secretary it has been a continuous story of upward trend in an increase of membership and a more secure financial status. This year in common with seemingly every other human interest we are forced to call attention to a slightly less optimistic state of affairs.

To my mind this is not of serious importance but simply offers a challenge for increased effort and more individual interest on the part of the members of this time favored Association—now 85 years old. To be a little more specific: The membership has dropped from 745 as reported last year to 668—a loss of 77 members. This is not so serious as it at first appears. It is in line with the drop of membership every where and with that of the American Medical Association itself. In a few months this total will be increased for some of the smaller county societies will be reinstated by paying up their dues for last year. The economic situation here in South Carolina may not be as bad as in many other states but it appears very real to us as members of the medical profession. The economic factor is not necessarily the major factor in a decreased membership. There are fewer doctors in South Carolina by several hundred than there were ten years ago notwithstanding a continued increase of population.

We have the lowest dues, with the exception of 3 or 4 states, of any state in the Union. The Association began with \$5.00 dues 85 years ago and this amount has never been exceeded but often less. It would appear reasonable that this should be considered as a minimum basis on which to run the Association.

The Chairman of the Council will submit a report of the finances of the Association and Journal.

As your Secretary I have endeavored to visit practically all sections of South Carolina during the past year in company very frequently with our President, Dr. Young. It has been our observation that there is no let up of enthusiasm in the scientific programs which is greatly to the credit of the South Carolina profession.

As your Secretary I have appeared on the programs of many professional and lay bodies. I have presented papers recently before some of the outstanding medical organizations of the country on the achievements of South Carolina doctors from the beginning of South Carolina medicine to the present time.

I have for the second year accepted the Chairmanship of the Early Diagnosis Campaign of the South Carolina Tuberculosis Association. I wish to appeal to all County Societies to place this subject on their programs again this year. I am greatly indebted to the officers and members for their whole hearted cooperation the last year and in conclusion I wish to state that in the more than two decades as your Secretary I have never asked a doctor in South Carolina to do anything for the Association or Journal that he did not do willingly and cheerfully.

---

REPORT OF COUNCIL

Dr. S. E. Harmon, Columbia, Chairman

On February 14th of this year the Council had a called meeting in Greenville to discuss several very important matters that we thought were of great interest. The report of the Committee on the Cost of Medical Care was taken up, and your Council discussed that and adopted a minority report.

At that same meeting we discussed the problem of the Reconstruction Finance Corporation, and it was agreed at that time to leave the matter to each county association to work out the problem for themselves.

Your Council met this afternoon and attended to all routine matters. The committee reports were made to the Council, and it was decided that unless there was something of real importance coming up it would not be mentioned in my report.

In presenting the financial report of the Journal and the Association I shall not burden you with reading it, because it would be too long. It has all been passed upon and audited by the auditor, and it is correct. We found, for the first year since I have been connected with organized medicine, we have a net loss of about \$400, due to the fact that the chief source of our revenue, which is advertising, has been materially reduced and due also, to some extent, to the loss in membership. It was thought wise by the

Council to ask each and every one of you, when coming in contact with representatives of first-class, ethical houses that handle instruments, drugs, etc., to personally solicit ethical advertising for our Journal.

The Council wishes to commend our associate editors and all others who contributed to building up and maintaining our Journal.

The subject of arranging the program came up and was discussed, and it fell to my duty to explain to some extent just how that was done, so that everybody would understand there was no partiality or favoritism shown.

The Program Committee, with the officers of the Association, in receiving contributions to the Association in the form of papers, collect these papers and work them out as best they can in building up symposiums and selecting the best subjects, and the program is arranged in that way—not with any favoritism, but to work it out and form a program to the best interests of the Association. It seems that there has been some dissatisfaction because all who wished to offer papers did not get places on the program, or were not placed where they felt they should be; and this explanation is made in the hope that it will be satisfactory in proving that there is no partiality shown.

A plan for reorganizing the State Board of Health has been discussed both with the Committee on Public Policy and Legislation, with the State Board of Health, and also with the Board of Councillors. The Committee on Public Policy and Legislation worked out a skeleton plan that has been adopted by the Board of Councillors. The Council wishes to recommend that the Chair appoint a committee to present this working plan to the House and the Committee on Free Conference (I am not well versed in political terms, and that may not be exactly right) to be worked out to the best advantage.

There is one report that was presented to the Council this afternoon that we think is right and proper shuold be read before this House of Delegates—the report of the Committee on Health and Public Instruction. Dr. Hines will read that report.

---

To THE SOUTH CAROLINA MEDICAL ASSOCIATION  
By R. M. Pollitzer, M.D. Greenville—Chairman  
Your Committee on Public Health and Instruction respectfully submits the following report:

According to the wishes and the orders of our President, Dr. J. R. Young we instituted a plan of public instruction on fundamental and vital matters of health through the lay press by clear and concise articles, written by the doctors of S. C., but printed unsigned. Prior to the letters being sent to many and various doctors scattered all over the state; Dr.

Young wrote to practically every S. C. newspaper, outlining the plan and asking for editorial co-operation. Quite a number of editors replied and promised their assistance.

After the incoming medical papers from the doctors had been received they were carefully read and edited. In some instances they had to be considerably abbreviated, so as to conform to the space requirements. The articles were then sent to Dr. Hines who distributed them at proper intervals to the newspapers who had agreed to publish them, and who had kindly offered their columns free. Later on some of the editors became weary and supported us but feebly, while one opposed us as being propagandists, and selfish. The great majority however have been very kind and most helpful.

The committee is greatly indebted to Dr. Young who planned this work, and then assisted us in many ways; to Dr. Hines without whose constant and untiring afforts the papers would not have gone to publishers, and last but by no means least to the doctors throughout the State who wrote the articles. To the Press in general we are grateful. For counting all sorts of newspapers, from daily to weekly etc. 65 of them have printed some or many of our articles. Without their assistance nothing could have been done.

The names of the contributors are:-

Dr. Barksdale	Dr. J. P. Price
Dr. Bunch	Dr. J. I. Waring
Dr. J. R. Young	Dr. L. H. McCalla
Dr. E. W. Carpenter	Dr. Douglas Jennings
Dr. Epting	Dr. Will Judy
Dr. J. G. Murray	Dr. E. C. Hood
Dr. C. W. Bailey	Dr. J. D. Guess
Dr. Leon Banov	Dr. Richard Allsion
Dr. James M. Beeler	Dr. Littlejohn
Dr. Austin Moore	

Probably many of you have seen some of the articles published in your own town paper, but it will not be amiss to state that the subjects ranged from Appendicitis and Prevention of Heart Disease, to the Education of a Doctor, Prevention of Diphtheria, and Preparing for Motherhood. The Comm. feels that the campaign has not been all that we could have wished; that is we would have preferred more contributions, and more papers published. But even so a large number of people have read some of the material, and some have become interested and edified. No one can say whether we really have succeeded, but all in all the Committee believes that the State Association has made a beginning in educating our citizens as to what Modern Medicine stands for, and what Medical Science offers to those who come for help in time.

## REPORT OF THE AUDITOR

Seneca, S. C.

April 17, 1933

Dr. E. A. Hines, Sec.-Editor,  
South Carolina Medical Association,  
Seneca, S. C.

Dear Sir:

I hand you herewith my report covering receipts and disbursements of the South Carolina Medical Association and the Journal of the South Carolina Medical Association for the fiscal year 1932.

While there has been a decrease in membership dues and advertising receipts, a substantial reduction in expenses has also been made so that a net loss of only \$400.02 is shown for the year.

Yours truly,  
Frances R. Richardson,  
*Auditor.*

## STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1932

By E. A. Hines M.D., Secretary-Treasurer and  
Editor of the Journal  
*Receipts*

Balance in Banks Jan. 1, 1932  
Defunct Seneca Bank ----- \$329.20  
S. C. State Bank ----- 709.94

Membership Dues ----- \$1,039.14  
----- 1,821.00  
----- \$2,860.14

*Disbursements*

Salaries ----- \$ 662.55  
Office Expense ----- 43.53  
Traveling Expenses Secretary ----- 50.00  
Printing ----- 406.08  
Attorney Fees ----- 100.00  
Expenses Official Stenographer of  
    Convention ----- 152.53  
Sundries ----- 37.21  
Annual Audit ----- 50.00  
Expenses two delegates American Medical  
    Association ----- 155.00  
Balance in Banks Dec. 31, 1932  
Defunct Seneca Bank ----- \$299.27  
S. C. State Bank ----- 153.97  
Postal Savings ----- 750.00

## STATEMENT OF RECEIPTS AND DISBURSEMENTS

JOURNAL SOUTH CAROLINA MEDICAL

ASSOCIATION

For Year Ending Dec. 31st, 1932

*Receipts*

Balance in Banks Jan. 1, 1932	-----	200.00
Defunct Seneca Bank	-----	\$1,126.29
S. C. State Bank	-----	1,310.03
		-----
		2,436.32
Cash on hand Jan. 1, 1932	-----	200.00
Subscriptions	-----	1,217.00
Advertising	-----	1,860.78
		-----
		5,714.10
		-----

*Disbursements*

Salaries	-----	\$ 1,853.40
Printing	-----	1,362.90
Office Expense	-----	241.40
Traveling Expenses Secretary-Editor	-----	50.00
Sundries	-----	134.20
Cash on hand Dec. 31, 1932	-----	200.00
Balance in Banks Dec. 31, 1932		
Defunct Seneca Bank	-----	\$1,023.89
S. C. State Bank	-----	98.31
Postal Savings	-----	750.00
		-----
		1,872.20
		-----
		5,714.10
		-----

## COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION AND JOURNAL OF SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1932

*Receipts*

Balance in Banks Jan. 1, 1932		
Defunct Seneca Bank	-----	\$1,455.49
S. C. State Bank	-----	2,019.97
		-----
		3,475.46
Cash on hand Jan. 1, 1932	-----	200.00
Dues	-----	1,821.00
Subscriptions	-----	1,217.00
Advertising	-----	1,860.78
		-----
		8,574.24
		-----

*Disbursements*

Salaries--Sec-Editor	-----	\$1,845.95
Stenographer	-----	670.00
		-----
		2,515.95
Printing	-----	1,768.98
Office Expense	-----	284.93
		-----

Traveling Expenses Sec-Editor -----	100.00
Expenses Two Delegates American Medi- cal Association -----	155.00
Expenses Stenographer of Convention --	152.53
Annual Audit -----	50.00
Sundries -----	171.41
Attorney Fees -----	100.00
Cash on hand Dec. 31, 1932 -----	200.00
Balance in Banks Dec. 31, 1932	
Defunct Seneca Bank ----- \$1,323.16	
S. C. State Bank ----- 252.28	
Postal Savings ----- 1,500.00	
	-----
	3,075.44
	-----
	8,574.24
	-----

*Assets As of Dec. 31, 1932*

Cash on hand and in banks -----	\$3,275.44
Furniture and Fixtures -----	724.77
	-----
	4,000.21

## NUMBER OF MEMBERS BY COUNTIES

	Paid	Hon.
Abbeville -----	7	1
Aiken -----	13	2
Anderson -----	37	3
Bamberg -----	7	1
Barnwell -----	15	
Berkley -----	5	
Charleston -----	84	9
Cherokee -----	8	3
Chesterfield -----	8	
Chester -----	10	5
Colleton -----	9	
Columbia -----	81	15
Darlington -----	7	
Dorchester -----	1	
Dillon -----	1	
Fdgefield -----	3	
Fairfield -----	2	
Florence -----	18	1
Greenwood -----	13	
Georgetown -----	2	
Greenville -----	79	5
Horry -----	1	
Kershaw -----	13	
Lancaster -----	6	
Laurens -----	8	7
Lexington -----	5	1
Marion -----	8	
Newberry -----	20	1
Oconee -----	8	4
Orangeburg -----	8	1
Pickens -----	13	2
Saluda -----	3	
Sumter -----	17	5
Spartanburg -----	43	2
Union -----	8	3

York -----	24	2
	-----	-----
	595	73
	-----	-----

The report of the Committee on Health and Public Instruction was read by Secretary Hines.

The President thanked the Committee for their faithful and untiring work.

On motion of Dr. W. P. Timmerman, Batesburg, a vote of thanks was given to the doctors concerned and all others who were instrumental in carrying out the plan.

Dr. Hines moved that the House of Delegates approve the appointment of the committees suggested by the President. The motion was seconded and carried.

The President announced the appointment of the following as the Reference Committee: Drs. W. R. Wallace, Chester; Thos. A. Pitts, Columbia; Olin B. Chamberlain, Charleston; R. M. Pollitzer, Greenville; J. C. Harper, Greenwood.

President Young then presented Dr. Robert Wilson, of Charleston, who addressed the House of Delegates on the subject of the report of the Committee on the Costs of Medical Care.

The following committee was appointed by the President to confer with and collaborate with the committees from the various county medical societies in studying and working out the problem of the care of the indigent sick: Drs. J. W. Jervy, Greenville; Robert Wilson, Charleston; Adam Haynes, Columbia; J. Moss Beeler, Spartanburg; Douglas Jennings, Bennettsville.

The report of the Committee on Medical Economics not having been received in time for presentation at the meeting of the Council on Tuesday afternoon, it was now read by Dr. C. B. Epps, Chairman of the Committee, and was briefly discussed by Dr. Hines.

Dr. William Egleston, Hartsville, Chairman of the State Board of Health, read his report.

The report of the special committee on Veterans' Hospitalization was read by Dr. J. S. Rhame, Chairman.

Dr. J. H. Cannon, of Charleston, presented the report of the Delegates to the American Medical Association.

Dr. J. I. Waring, Chairman, read the report of the Committee on Necrology, the members of the House standing with bowed heads.

## NEW BUSINESS

Secretary Hines read a telegram of greetings received from Mr. C. P. Loranz, Secretary-Manager of the Southern Medical Association.

Dr. Hines also stated that a communication had been received from Mrs. Lawrence, State Chairman of the Parent-Teacher Association, asking the State Medical Association's approval of the work under-

taken by her committee. After brief discussion by Dr. J. H. Cannon and Dr. R. M. Pollitzer, on motion of Dr. Pollitzer the movement was endorsed.

On motion of Dr. Hines, Drs. H. R. Black, of Spartanburg, and J. S. Stribling, of Seneca, were nominated to the American Medical Association for affiliate fellowship.

The Secretary stated that a telegram had been received extending an official invitation to the Association to meet in Charleston in 1934. On motion, the invitation was accepted by a standing vote.

#### ELECTION OF OFFICERS

On motion by Dr. McLeod, which motion received numerous seconds, Dr. William Egleston, of Hartsville, was elected President-elect. There were no other nominations, and the election was unanimous.

Dr. E. A. Hines was unanimously re-elected Secretary-Treasurer on motion of Dr. J. S. Rhame.

The following Councillors were unanimously re-

elected for their respective districts:

First District—Dr. J. H. Cannon, Charleston.

Third District—Dr. W. L. Pressley, Due West.

Fifth District—Dr. J. R. Des Portes, Fort Mill.

Seventh District—Dr. T. R. Littlejohn, Sumter.

On motion of Dr. W. A. Tripp, Dr. J. T. Taylor, of Adams Run, and Dr. Frank Lander, of Williamston, were re-elected as members of the State Board of Medical Examiners for the First and Third Congressional Districts, respectively.

Dr. R. F. Abell, President-elect, announced his intention of presenting to the Governor his resignation as member of the State Board of Medical Examiners for the Fifth District. On motion, which was duly seconded and carried, Dr. J. C. Caldwell, of Chester, was nominated to succeed Dr. Abell.

There being no further business to come up, the House of Delegates then, at eleven-ten p. m., adjourned *sine die*.

## BOOK REVIEWS

**THE MEDICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month) Volume 16, No. 6. (Mayo Clinic Number May 1933 INDEX NUMBER. Octavo of 239 pages with 28 illustrations. Per Clinic year, July 1932 to May 1933. Paper, \$12.00; Cloth, \$16.00 net. W. B. Saunders Company, Philadelphia, London.

**SENIILE CATARACT METHODS OF OPERATING.** By W. A. Fisher, M.D., F.A.C.S. Chicago. Ill. U. S. A. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Ill.; Formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; Formerly President, Chicago Ophthalmological Society; Member, Illinois State Medical Society; Chicago Medical Society; Fellow, Americal Medical Association; Fellow, American College Surgeons; Fellow of the Academy of Ophthalmology and Otolaryngology. With the collaboration of Prof. E. Fuchs, Vienna, Austria; Prof. I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind, India; Dr. John Westley Wright, Columbia, O.

**THE HISTORY OF DERMATOLOGY.** By Wm. Allen Pusey, A.M., M.D., LL.D. Professor of Dermatology, Emeritus University of Illinois. Sometime President of the American Dermatological Association and of the American Medical Association. With Thirty-three Illustrations. Price:

\$3.00 postpaid. Charles C. Thomas—Springfield, Illinois—Baltimore, Maryland.

The author of this book is well known in South Carolina having delivered an address before the State Medical Association at Orangeburg some years. Dr. Pusey is one of the world's most distinguished dermatologists and now with his extraordinary experience he is devoting a large part of his life to the record of his observations and thoughts on many subjects. It appears that he is a pioneer in writing a history of dermatology in English. The contents cover a wide range of subjects as may be seen from this list:

#### CONTENTS

##### Introduction

1. Early Ancient Dermatology, Egypt to Greece. 3000 B.C. To 300 B.C.
2. Graeco-Roman, Arabian and Medieval Dermatology, Rome to Renaissance, 300 B. C. to 1500 A. D.
3. Dermatology in Early Modern Europe, 1500 to 1750
4. Dermatology Finding Itself, 1750 to 1825.
5. Threshold of Modern Dermatology, Clinical Dermatology, 1800 to 1850.
6. Threshold of Modern Dermatology, Laboratory Dermatology, 1800 to 1850.
7. Modern Dermatology, First Phase. Continental Europe, 1850 to 1900
8. Modern Dermatology, First Phase. Great Britain and the United States, 1850 to 1900.
9. Modern Dermatology, Present Phase, Since 1890.

## Historical Index of Dermatology

## General Index

This book represents an enormous amount of work on the part of the author and his assistants although it is a volume of only 223 pages. The bibliography is of extraordinary value to future historians. The printers have done a beautiful job from every standpoint.

**RADIOLOGIC MAXIMS.** By Harold Swanberg, B. Sc., M.D., F.A.C.P., Editor of The Radiological Review, Quincy, Illinois. With a foreword by Henry Schmitz, A. M., M.D., L.L.D., F.A.C.S. Professor of Gynecology and Head of the Department, Loyola University School of Medicine. Cloth. Price, \$1.50, Pages 126. Quincy, Illinois: Radiological Review Publishing Company, 1932.

This little volume appears to have concentrated within its one hundred and twenty seven pages the gist of all the knowledge about radiology of a practical nature known to the present time. The general practitioner will find an immense amount of epitomized facts presented in an attractive way.

**THE MEDICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month) Volume 17, No. 1. (New York Number—July 1933) Octavo of 324 pages with 64 illustrations. Per Clinic year, July 1933 to May 1934. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

**SURGICAL CLINICS OF NORTH AMERICA.** (Issued serially one number every other month.) Volume 13, Number 3. (Lahey Clinic Number—June 1933) 275 pages with 98 illustrations. Per

Clinic Year (February 1933 to December 1933) Paper \$12.00; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

**MEDICAL CLINICS OF NORTH AMERICA.**

(Issued serially one number every other month.) Volume 16, Number 5. (Baltimore Number—March 1933.) Octavo of 257 pages with 16 illustrations. Per clinic year July 1932 to May 1933. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London W. B. Saunders Company, 1933.

Harop discusses in this issue the treatment of simple obesity and recommends that such cases be hospitalized and reasonable rapidity in the reduction of weight carried out four or five pounds a week being satisfactory. The stay in the hospital need not be long but further treatment carried out as an ambulatory patient. A case has been cited weighing 329 1-2 pounds.

Bridgman of Johns Hopkins writes on coronary thrombosis saying that the diagnosis should not be very difficult when one is confronted with a patient with a history of supposed angina pectoris. The electro cardiograph is of course of some assistance.

Byrnes speaks a good word for the injection of alcohol into the nerve trunk or ganglion in trigeminal neuralgia.

**MEDICAL CLINICS OF NORTH AMERICA.**

(Issued serially one number every other month.) Volume 16, No. 4. (Boston Number—January 1933) Octavo of 256 pages with 33 illustrations. Per Clinic Year July 1932 to May 1933. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company 1933.

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# The Journal of the South Carolina Medical Association

VOL. XXIX.

GREENVILLE, S. C., AUGUST, 1933

NO. 8

Entered as second-class matter February 9, 1916, at the post office at Greenville, South Carolina, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Sec. 1103 Act of October 3, 1917, authorized August 2, 1918.

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**Lest we forget** "The dextrin-maltose preparations possess certain advantages. When they are added to cow's milk mixtures, we have a combination of three forms of carbohydrates, lactose, dextrin and maltose, all having different reactions in the intestinal tract and different absorption rates. Because of the relatively slower conversion of dextrins to maltose and then to dextrose, fermentative processes are less likely to develop. Those preparations containing relatively more maltose are more laxative than **Dextri-Maltose** those containing a higher percentage of dextrin (unless alkali salts such as potassium salts are added). It is common experience clinically that larger amounts of dextrin-maltose preparations may be fed as compared with the simple sugars. Obviously, when there is a lessened sugar tolerance **for thirty years** such as occurs in many digestive disturbances, dextrin-maltose compounds may be used to advantage." (Queries and Minor Notes, J.A.M.A., 88:266)

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# The Journal OF THE South Carolina Medical Association

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## EDITORIAL

### THE JOURNAL AND ITS ADVERTISERS

We wish to emphasize at this time an urgent need for prompt action on the part of the members of the State Medical Association in assisting the Journal to secure more advertising. This is not very difficult to do because efforts of the profession concentrated on this subject has been successful at other times when the Journal needed friends.

President Abell is giving special attention to the Journal in his travels about the State which is greatly appreciated but it will be necessary for members of the Association to support his appeal.

We quote below an editorial in the August issue of the New Orleans Medical and Surgical Journal one of the oldest Journals in the country and the official organ of the Louisiana and Mississippi State Medical Societies. This particular editorial expresses our views so admirably that we feel our readers should have the benefit of it.

### TO OUR READERS

Doubtless some of those that saw the June issue of the Journal noted and read the appeal appearing in the advertising columns, to use those products which are advertised in our Journal. We say *our Journal* advisedly because it is your Journal. It is owned jointly by you readers and you should have a personal interest in patronizing your own advertisers. The firms that advertise in the State Journal should be given preference, not only because they are helping you in the support of your Journal, but also because every advertisement that appears in the advertising pages of the Journal represents a high grade product, ethical, and standardized, in which you can have absolute faith. There is not an advertisement in the Journal which does not have to pass the American Medical Association's high grade, critical investigations, and if it is not up to the standard or it is not ethical it can not appear in our pages. If drug houses, instrument mak-

ers, and food sellers do not advertise in the State Journal, then there is always the question as to whether or not their products are reliable and dependable.

You, who have felt the financial difficulties for the last few years, must realize and appreciate that the Journal likewise has suffered, advertising space has been cut down, and other sources of income have diminished. Why not then help out one of the medical activities in which you are interested without cost to yourself? Buy from these firms who advertise in the Journal. If detail men say they do not advertise in your Journal which you are supporting, ask them why not, and suggest to them that such an advertisement would yield them excellent results. If the several thousand physicians in Louisiana and Mississippi who receive the Journal would adopt this attitude then there would be an urge and a stimulus to those firms that are not helping with the Journal to take space and thus reciprocate with the medical profession upon whose support their livelihood depends. An attitude of healthy skepticism concerning non-advertised products, and a repeated urge by our numerous representatives in the medical profession, would certainly help, aid and assist in the carrying on of one of the important activities of the State Medical Societies.

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#### PRESIDENT ABELL STARTS CAMPAIGN TO PROMOTE INTERESTS OF STATE ASSOCIATION

The President of the State Medical Association acted promptly as soon as he was inducted into office at the Spartanburg meeting in formulating very definite plans to coordinate all the interests of the State Medical Association. These plans have been incorporated in an admirable address which has been delivered before several of the constituent state societies, notably at the Second District and the Chester County Medical Society. Dr. Abell has four major projects around which his greatest interest centers namely; the Medical College of the State of South Carolina, the State Board of Medical Examiners, the State Board of Health and the Journal of the South Carolina Medical Association. Dr. Abell rightly argues

that inasmuch as our State Medical College is the only source of supply of physicians for the greater part of the people of South Carolina that the College should be supported not only by the Legislature and the people who profit by the ministrations of the graduates but that the profession itself should stand solidly behind the Institution. Dr. Abell has definite ideas as to how the members of the South Carolina Medical Association may aid in solving some of the financial problems of the Medical College.

The extended experience of our President as a member of the State Board of Medical Examiners has brought sharply to his attention the great cause of medical education but also the fact that the State Board of Medical Examiners is an important factor in the promotion of not only strictly legal compliance with the laws of the State on the part of applicants for licenses to practice medicine but their moral and ethical qualifications as well. This means that only the highest type of practitioner from every standpoint should be continued in office as a member of the State Board of Medical Examiners.

Dr. Abell speaks in no uncertain terms of his conviction that inasmuch as the State Board of Health is the South Carolina Medical Association according to the law, every member of the Association should interest himself in the health of the people of South Carolina and get behind the Executive Committee with the full force of their influence for the betterment of the public health. By act of the last Legislature the Board of Health is undergoing a period of reorganization in which the Executive Committee and the Budget Commission jointly participate. It is hoped and believed that this reorganization when it shall have been completed will prove to be a satisfactory adjustment to all parties concerned.

Our President is very keenly interested in the welfare of the Journal of the South Carolina Medical Association. In his addresses to the various Medical Societies he takes the position most emphatically that the Journal now nearly thirty years old has rendered an unusual service to organized medicine in this State. That it compares very favorably with any of the State Journals published by any or all of the States with like resources as to membership and dues. Dr. Abell urges every member of the

State Association to continue to support the Journal needed more than ever at the present time as a medium for interchange of ideas and the publication of the progress of both scientific and economic medicine.

As has been previously mentioned in connection with the distinguished honor accorded Dr. Abell in electing him to the Presidency he has given deep thought to the extraordinary economic problems confronting the profession. As he travels about the State he will speak of these matters and endeavor to advise with the members of the profession as to their local problems of which there are many. Dr. Abell has had a long experience as a hospital administrator and therefore has had to deal with many of the most vexing situations the profession in this State has ever faced. He is thoroughly in sympathy with the difficulties in the pathway of the general practitioner of today and will listen with an attentive ear to his problems. All in all we have a President whose every effort will be during his term of office to promote harmony in the medical profession of South Carolina, to inspire whole hearted co-operation on the part of the physicians of the State to the end that the sick public for whom a doctor lives and moves and has his being may be benefited more surely than has ever been the case in the history of the State.

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#### PLANS FOR THE CHARLESTON MEETING 1934 GETTING UNDER WAY

There was held at Chester on the evening of Thursday, July 27 a meeting of the President, Dr. Abell, the President Elect Dr. William Egleston and the Secretary of the State Association to map out preliminary plans for the next meeting of the State Association. A discussion of the personnel of the committee to be appointed by the President was had. There was also a consideration of the chief features for the next convention and an agreement as to their general scope. While this preliminary step has been taken long in advance and is a most important gesture in connection with our next meeting the very fact that we are going to meet in Charleston leaves no doubt about the success of the Eighty Sixth annual meeting.

There never has been a failure to have not only a good time but a good attendance and a good program at every meeting held there since our Association was organized in Charleston in 1848. Charleston is a great medical center with a history unsurpassed for high ideals and great scientific attainments for more than a hundred years. There has been progress also in the up-building of our splendid state medical school since the Association met in Charleston the last time. The Medical College boasts of additional new buildings and improvements in other ways. The city itself while always breathing the atmosphere of the old South is fully alive to modern developments with ample hotel facilities and meeting places for the Association. The date has not been fixed for the next meeting but it will not vary much from the time we are accustomed to, that is, in April.

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#### CHESTER HAS GREAT MEETING

One of the most delightful and inspiring county society meetings held anywhere in the State in recent months was that of the Chester County Medical Society, Aug. 27. This meeting was really a get together of the officers of the State Medical Association including the Councilor of the Fifth District and a number of visitors from surrounding counties. The scientific program was in effect an organization program, every speaker dealing with some important phase of organized medicine. President Abell spoke of the future of the State Medical Association. Dr. William Egleston, President Elect, discussed at length the State Board of Health. The Secretary-Editor gave a detailed account of the recent meeting of the American Medical Association at Milwaukee and considered the effect of the deliberations of this great national organization on the future welfare of American Medicine. Dr. R. S. Des Portes, Councilor of the Fifth District gave the members present the benefit of his experience and observation of some of the pressing problems of the time. The meeting was held at the beautiful home of Dr. W. R. Wallace, President of the Chester County Medical Society. A delightful banquet was served and the evening proved to be not only a scientific treat but a social success. As is the case with

all good societies the Secretary usually lends a hand at everything that takes place for the good of the organization. The Chester County Society has such a man in the person of Dr. W. J. Henry who gave evidence of having the details

of his duties well in hand. This meeting was a notable one as having been the opening gun of the campaign, so to speak, for greater things yet to come in the name of the South Carolina Medical Association.

## ORIGINAL ARTICLES

### SOME RECENT CONCEPTS CONCERNING ESSENTIAL HYPERTENSION\*

*Edgar A. Hines, Jr., M.D., Fellow in Medicine,  
The Mayo Foundation, Rochester, Minnesota*

In spite of the generally pessimistic attitude toward the treatment of essential hypertension and the increasing morbidity and mortality from cardio-vascular diseases, some progress has been made in the understanding of the classification, the arteriolar pathologic changes and the mechanism of high blood pressure. With this fundamental knowledge as a background, it has been possible to evolve a clearer conception of the different stages of hypertension and to formulate saner, although far from ideal, methods of treatment. Every physician who will be called on to see and treat patients with hypertension should have a clear idea of the present, although incomplete, knowledge of this disease.

Long before the introduction of the sphygmomanometer by von Basch, the high-tension pulse was recognized and was associated with renal and vascular disease. Von Basch, who took thousands of readings of blood pressure, recognized that a number of his subjects with hypertension gave no evidence of arteriosclerosis or renal disease. The general acceptance of this fact followed the exhaustive clinical studies and presentation of Sir Clifford Allbutt, who virtually forced on the medical profession the realization that hypertension could, and frequently did, exist without marked arteriosclerosis and without clinical or pathologic evidence of renal failure. This is now called the "modern theory" of essential hypertension but, as is evident, it is not so very modern.

A sensible classification of the various types of hypertension will give the physician a basis on which to found a more reliable prognosis and to outline more effective treatment. The present classification is based on both clinical and pathologic concepts, and is faulty chiefly because of imperfect knowledge of fundamental causes. The classification given in table 1 is consistent with the present knowledge of hypertension.

Keith, Wagener and Kornohan have recently established a form of hypertension which they have termed "malignant hypertension" in which the clinical course is severe and the vascular changes are rapid, leading to necrosis and endarteritis of the arterioles. The ophthalmoscopic examination reveals a characteristic picture: edema of disks, marked constriction of arterioles, and other signs of retinitis. This type of the disease usually affects young adults and may affect children. One writer has reported such a case; the patient was a child, aged four and a half years. The outcome is usually rapidly fatal. In the series of seventy-five cases reported by Keith, Wagener and Kornohan, 90 per cent of the patients were dead within two years. These patients die from renal, cardiac, or cerebral failure, or from a combination of the three. Physicians not familiar with this type of hypertension are likely to make a diagnosis of chronic glomerular nephritis.

### ETIOLOGY

The importance of the familial factor in the etiology of essential hypertension is now recognized. Recent statistical studies indicate that from 50 per cent to 75 per cent of subjects with essential hypertension will give a definite, positive family history of cardiovascular renal disease. There seem to be, also, certain racial factors involved. Donnison found practically

\*Read before the South Carolina Medical Association, Spartanburg, South Carolina, April 19, 1933. Work done under the direction of Dr. George E. Brown, Division of Medicine, The Mayo Clinic.

no hypertension among aboriginal African negroes, but the succeeding generations of American negroes have hypertension in more severe form than members of the white race(10). The low incidence of hypertension among the Chinese has been, so to speak, a medical Chinese puzzle for a number of years. The higher classes of Orientals have hypertension in degrees comparable to Occidentals(3). Conversely, the high incidence of the condition in the United States, and its apparent relation to our high-powered type of life has prompted some writers to term this the "American disease." Competition and abnormal strivings probably will accelerate the mechanism of hypertension in any race.

This is not a disease solely of the later decades of life. It is true that the majority of cases are recognized when patients are more than forty years of age, but hypertension frequently affects young adults or even young children. Schulze and Ochsner tabulated 960 cases in which the patients were aged less than forty years; the cases were recognized at The Mayo Clinic between 1922 and 1927.

Almost every chemical and physical factor in the body has been incriminated as the cause of essential hypertension. The endocrine glands have received a large share of the blame, but there is no evidence that any gland or group of glands is a direct cause. That there is overproduction of epinephrine, so-called adrenalemia, has been a favorite hypothesis, but no one has been able to prove that there is an increase of epinephrine in the blood in any type of hypertension, except in those rare cases of paroxysmal hypertension which are caused by a type of suprarenal tumor. Major has found an increase of pressor substance which he calls a "guanadine compound" in the blood of all patients with chronic glomerular nephritis, and in that of some patients with essential hypertension, but he has yet to prove that increase of this substance is the cause of hypertension or the result of the nephritis.

The etiologic concept which has the most favor at the present time is the so-called neurogenic theory. This concept now has enough stability from experimental and clinical standpoints to warrant careful consideration. The blood pressure of all persons varies from

moment to moment, and reacts to all types of stimulation. Intra-arterial pressures are extraordinarily responsive. Among subjects with low blood pressures these pressor reflexes are slight; frequently, during the day, they do not exceed 10 mm. of mercury of systolic pressure. In the presence of Addison's disease the responses may be less. Among subjects with essential hypertension these pressor reactions are greatly exaggerated, averaging three to six times the normal increase. These heightened vasopressor reactions of the hypertensive subject may be the result of a hypersensitive vasmotor center; that is, they may have central origin. The parts played by the pressor hormones, and by pressor zones in the carotid artery and aorta, are not known. If the hypothesis is valid that there is a constitutional basis for these exaggerated responses in hypertension, it would be anticipated that they could be demonstrated years before the development of clinical degrees of hypertension.

In studying lability of blood pressure of normal subjects, and of subjects with hypertension, Mueller and Brown found variations in hourly readings taken on the same subject, but the variations were greatly increased among the latter group of subjects. With this lability in mind, a simple, standard method of measuring this variation has been developed(4). If, after a period of rest, the hand is placed in ice water at a temperature of about 4°C., and is kept there for a minute, there will be a rise in blood pressure. Within two or three minutes after the hand is removed from the ice water the blood pressure will tend to return to the previous level. This elevation will be found to coincide closely with that of the blood pressure of any person during the course of a day. All subjects can be divided into three groups on the basis of this rise in systolic pressure in response to local exposure to cold: (1) subjects with reactions of from 5 to 15 mm. of mercury; (2) subjects with reactions of from 20 to 40 mm. of mercury, and (3) subjects with reactions of from 20 to 130 mm. of mercury (or more). The first group includes the majority of persons who give no evidence of hypertension. The second group consists of from 5 to 10 per cent of persons who do not have hypertension, and the third group includes

all persons who have essential hypertension but whose condition has not reached the fixed stage of marked organic change. It is this wide variability in essential hypertension which may be a large factor of wear and tear in producing subsequent vascular changes. Subjects with normal blood pressure and hypertensive reactions are particularly interesting. Undoubtedly, subjects of this group give definite evidence of abnormal vasopressor responses. There seems reason to suspect that this is the group in which many cases of essential hypertension will develop. Recalling the concept that essential hypertension is largely of familial origin, early in life there should be some evidence of a vaso-motor pattern indicating some abnormality in the vasomotor nervous system. This exaggerated response of blood pressure to stimulation is believed to be the early expression of this constitutional trend. Of a group of twenty-five normal subjects with abnormal reaction, 75 per cent gave histories of hypertension, affecting one or more members of the family. That these normal subjects with abnormal reactions will later have hypertension is a conjecture which must be verified after a number of years of observation. However, it can be said, on the basis of family histories alone, that a larger proportion of them, than of an average group will have hypertension.

#### PROGNOSIS

With the aid of better laboratory methods of testing renal and cardiac function and a clearer understanding of the significance of vascular changes in the ocular fundi, it is possible more adequately to predict the outcome in many cases of hypertension. Any dogmatic attempt at prognostication, however, is likely to lead to embarrassment. The age of the patient is of definite prognostic significance. Generally speaking, the younger the person when the hypertension is discovered, the more severe will be the course of the disease. Numerous observations have shown that hypertension of women is not likely to progress as rapidly as that of men. The operative risk to patients with hypertension is of considerable importance. The risk is not increased if patients do not have marked organic vascular changes, and cardiac function and renal function are good, even though the blood pressure is considerably

elevated. McQuiston and Allen, in a study of 350 patients who underwent surgical operations at The Mayo Clinic, found a mortality rate of only 2.6 per cent. The mortality rate attributable directly to hypertension was only 0.86 per cent.

#### TREATMENT

The first essential in the evaluation of methods of treatment is the recognition of a fact which I have already mentioned; namely, that the blood pressure of the majority of persons with essential hypertension is variable. It may be high at one reading and low at another. It will vary not only from day to day but from week to week, or even from year to year, without treatment of any kind. Ayman obtained one or more normal readings in 56 per cent of his cases. In view of this fact, there should be greater conservatism in statements concerning the effect of any drug or procedure on the blood pressure; a policy which is not adhered to very closely by many experimenters and by many pharmaceutical houses which offer to the medical profession drugs for lowering of blood pressure. No drug is available which will cause any permanent lowering of blood pressure or which can be said to be a cure for essential hypertension. Investigators have yet to produce a satisfactorily controlled series of experiments on the effect of any depressor drug on the blood pressure. The various preparations of nitrites give temporary results, with the maximal effect lasting only a few hours. Bismuth subnitrate has proved of no definite value in cases observed by Dr. George Brown and me. Potassium sulphocyanate in doses of 0.1 gm. (1 1-2 grain) three or four times a day may have some effect on the variability of blood pressure, but it is probable that the dose has to be pushed to toxic, and in some cases to dangerous limits to give such results. The sedative drugs, especially the barbiturates, are of great value in decreasing psychic and vaso-motor irritability. They have a definite depressor effect on variability of blood pressure as long as the effect of the drug lasts. Alcohol has a similar action.

Because drugs are inadequate in treatment of patients with essential hypertension, reliance must be placed on general measures in the broadest sense. If permanent results are to be

secured, the preorganic, or functional stage of hypertension must be recognized and measures must be instituted in that stage. Treatment should be directed toward those factors which increase vasomotor irritability and thus produce wear and tear on the vascular system. Each patient should be considered individually. If possible, his vasomotor reaction should be determined by some test such as the ice-water test, which has been described, or by hourly readings carried out in a hospital over a period of twenty-four hours. If the reactions are excessive, and those of the majority of patients will be, the best means for removing or decreasing disturbing environmental stimuli should be determined. This demands careful investigation of the patient's work and play, and prescription of proper amounts of rest and recreation and proper sedative drugs. It is well to give each of several drugs a trial so that the most effective drug for that particular patient may be used. It would be interesting to know whether changes in environment and periodic rest would diminish the vasomotor reaction.

Long periods of rest in bed should be avoided, for these will produce no permanent lowering of the blood pressure and will tend to inculcate an undesirable sense of invalidism.

In the late organic stages of hypertension, radical effort to remove foci of infection is not advisable. There is difference of opinion regarding the advisability of removing foci in the presence of this disease. There is no proof that such procedures affect the course of the hypertension.

The great variety of diets advocated suggests that no diet is of much value in hypertension. Unless there is evidence of decreased renal function, there is no good reason to inflict on the already uncomfortable patient a diet restricted as to meat and salt. A well balanced diet, containing a moderate number of calories, should be prescribed. If the patient is obese, a diet carefully planned to cause reduction of weight should be advised.

If definite organic changes have occurred, and there is evidence of fixation of blood pressure, treatment should be directed chiefly toward measures which will preserve the function of the heart and kidneys.

The psychologic attitude of the patient is

most important. It is here that the family physician can be of inestimable value. A cheerful and optimistic attitude toward life on the part of the patient is desirable. A feeling of invalidism should be avoided; consequently, the blood pressure of the patient should be kept in the background as much as possible. After the reactivity has been determined, frequent readings of blood pressure are of no great value, and if persisted in tend to make the patient "blood-pressure conscious." The nature of his symptoms should be explained in a reasonable manner. He should be led to understand that he can control his own blood pressure better than can the doctor or anyone else.

The corner-stone of any plan of treatment of hypertension should be moderation. This corner-stone should rest primarily on the family physician. Readjustment of the patient to his work, his recreation, and his diet, with this watchword in mind, will give him the happiest and most satisfactory life that is possible with present knowledge of essential hypertension.

TABLE 1  
*Classification of hypertension*

Primary or essential hypertension	1. Preorganic functional
	2. Organic benign intermediate forms malignant
Secondary forms of hypertension	1. Glomerular nephritis and toxemia of pregnancy
	2. Arteriosclerosis
	3. Aortic heart disease and arteriovenous fistula
	4. Coarctation of aorta
	5. Tumors of chromaffin tissue; paroxysmal forms
	6. Hyperthyroidism
	7. Intracranial lesions

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#### DISCUSSION

Dr. J. H. Cannon, Charleston:

I think we are fortunate to have this presentation of the modern conception of hypertension. I find it difficult, in the few minutes allotted me, to decide just what is the best phase of the doctor's paper to comment upon. It seems to me, however, that an outstanding thing which deserves comment is the fact that he has talked less about the management of the hypertension *per se* than he has about the patient himself, and it seems to me that that is definitely correct. Those of us who see many cases of hypertension are impressed with the fact that it seems to be the opinion, at least of a good many men, that it is the hypertension which they should treat and which they work fanatically to control, and if they lower the blood pressure they are quite confident they are benefitting the patient. As to another factor which the doctor mentioned, foci of infection, many men seem to feel that the more of these they can find and remove the more they have done for the patient. But I think we are more and more impressed with the fact that over-enthusiastic removal of such may be harmful, although judicious attention to such is to be recommended.

Another point. The longer we see and experiment with various diets, the same as with various drugs, the more we are impressed with the fact Dr. Hines has mentioned—that no single diet seems to have any particular effect on the prognosis or in the subjective feeling of the patient with progressive hypertension.

The question that Dr. Christian has recently men-

tioned seems to deserve some thought and consideration. He recommends moderate doses of digitalis over a long period of time, which he believes will retard the progress or the rapidity of onset of the heart failure. The difficulty about agreeing or disagreeing with the doctor is the difficulty of proving or disproving his theory. It is difficult to prove, but on the other hand, equally difficult to disprove.

I believe Dr. Hines' paper deserves careful consideration. He has given, in the short time he was allotted, a very admirable discussion of the subject.

Dr. J. H. Gibbes, Columbia:

It seems to me that Dr. Hines has given a most comprehensive and useful resume of the subject of hypertension. It is not my intention to discuss the whole subject in any way whatsoever, but a few aspects of his paper it seems to me are of particular importance. First of all, I want to say that his handling of the subject of the treatment of hypertension is admirably done. Just one word about the question of diet. There is nothing, I think, he could have said of more useful nature to a group of general medical men that what he did say.

The only important aspect of the diet in hypertension, in my experience, is that it be a low calory diet—that the patients be permitted to lose weight rather than to hold the weight or gain weight. In the underweight patient with hypertension there is very little opportunity for the physician.

I believe that the medical profession, in their efforts to usefully classify hypertension have made another mistake in the application of the word primary or essential to it. It has no more place, I believe, in the modern concept of disease than the old idea of spontaneous generation had in the science of biology; and the longer we use it the longer we are upholding a mental barrier that is difficult to get over. I think it is due to our ignorance and failure to understand physiological processes that we use this term and that it is a barrier to thought and an impediment to progress.

Another phase of the subject I want to say just a word about is the matter of the eye-grounds and their relation to hypertension. I do not believe that the observations in this connection are in any sense conclusive. Anyone will recognize that in cases of advanced hypertension the changes found and observed in the eye-grounds by those observers are true enough. The point I wish to make is this—that anyone who is doing general medicine and routinely examining eye-grounds will see these so-called hypertensive eye-grounds with no hypertension whatever. The same thing is true of the arteriosclerotic changes in the eye-grounds. Advanced retinal arteriosclerosis can often be encountered without hypertension. One other thought. I have come in the course of years to place more and more emphasis on the finding of moderately elevated systolic blood pressure as a finding of hyperthyroidism. When you find in relatively young people a systolic blood

pressure of 135 to 140 and a diastolic blood pressure of 70 to 75, you may put it down, in my opinion, to hyperthyroidism until it is proven otherwise.

(No further discussion.)

### \*RECENT ADVANCES IN X-RAY AS AN AID IN DIAGNOSIS

By Floyd D. Rodgers, M.D., Columbia, S. C.

The title of this paper, if closely adhered to, would lead me into a maze of technicalities that would be of interest only to the expert roentgenologists and this paper is intended for the profession as a whole.

The new inventions, the new methods, and the best that the instrument maker can do, only help but never make a competent doctor. The entire subject of Roentgenology is bound up in the competence of the worker, for the Roentgenologist should be first a physician of education, training and experience and must be thoroughly acquainted with all branches of medicine if he is to become an expert Roentgenologist, for the possession of mechanical equipment is the least of the requirements for a Roentgenologist just as the possession of knives, scissors and hemostats does not make a Surgeon. New methods and instruments are being constantly devised.

*Head:* In the X-ray examination of the skull for fractures, there are new small Bucky diaphragms that help our accuracy. The injection of air into the ventricle as introduced by Dandy of Baltimore, has facilitated the diagnosis and location of tumors of the brain. The injection of iodized oil in the paranasal sinuses has been of great usefulness in the diagnosis of obscure conditions in this region. Iodized oil in the spinal canal enables the Roentgenologist to locate very accurately tumor of the cord, etc.

The accuracy and importance of X-ray examinations of the teeth is so well known that it is only mentioned in passing.

Dr. Percy Hay, a South Carolinian, has developed the roentgenological examination of the soft tissues of the neck into a very important procedure in roentgenology and today is probably the greatest authority on the subject.

The location of foreign bodies in the eye has

been an important function of the X-ray for many years and many elaborate methods of localization have been devised, but it is an honor to South Carolina that Dr. J. W. Jervey, Sr. of Greenville simplified the method by attaching small metallic clamps at two points on the sclera so that with stereoscopic plates, accuracy in location is immensely improved and the method is far simpler than any other.

The location of calculi in the ducts of the salivary glands is accomplished accurately, easily and quickly with well-made X-ray plates.

In the endocrine diseases, when the pituitary is suspected, valuable aid can be given by visualizing the sella radiographically.

*Chest:* The X-ray examination of the chest is one of the most useful examinations that is made. The expert Roentgenologist can make the earliest and most accurate estimation of T. B. pathology in the chest, and with a series of plates his estimation of the progress of the disease is almost uncanny. The location and size of cavities can be accurately stated and with iodized oil bronchiectatic sacculations can be mapped and the progress of treatment recorded.

The tele-roentgenogram is the most accurate method known of estimating the size and position of the heart and the fluoroscopic examination gives you the living pathology to study that is of incomparable importance. Aneurysms are seen in the chest very readily and can be definitely recognized by pulsations.

Substernal thyroids and the persistent thymus are diagnosed by X-ray plate more frequently and more accurately than in any other way.

In recent years oblique and lateral films of the chest have come into use and the roentgenologists have learned to interpret them to the great advantage of the medical profession.

Metastatic nodules of Carcinoma and the snow-ball infiltrations of Sarcoma is definitely established by X-ray examination and can only be accurately estimated in this way.

The various tumors of the lungs can be evaluated quickly and easily when this detection is difficult by any other method.

The effects and results of Phrenicotomy can be estimated just as the results of artificial pneumothorax are studied by X-ray plates of the chest, giving the most valuable information.

\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 21, 1933.

Abscess of the lung, its location and the point for drainage, are best estimated by X-ray studies. Pulmonary infarcts, number and location are easy for the Roentgenologist.

The diagnosis of pneumonia is certain in children and often proves the only method by which an accurate diagnosis can be made. Both the stethoscope and percussion often fail in infants and children, although they may have very large consolidations. In the pneumonias of the adult, X-ray studies are just as important. The presence of fluid is detected early.

The presence and location of foreign bodies in the chest is a very important part of our work and their removal under direct fluoroscopic control is done daily.

*Abdomen:* The detection of foreign bodies in the alimentary canal, calculi in the urinary tract, are indispensable use of the X-ray.

*Pregnancy:* In suspected pregnancy we have in the X-ray a method of proving beyond a doubt that you are dealing with a pregnant uterus and at term the position of the foetus can be stated, even the presence of a monster can be diagnosed before delivery. The knowledge of a single or double pregnancy is invaluable to the obstetrician and can be most accurately diagnosed by X-ray examination.

With the opaque meal, the stomach can be studied as to its size, position and motility, ulcers of the stomach and duodenum can be seen and recorded just as the presence of cancer is detected. Abnormal conditions of the small intestine and the colon are readily made out.

Ulcerative colitis can be visualized by the new method of the Mayo Clinic; i. e.: give a barium enema; fluoroscopic and plate examination is made; then patient is allowed to expel the enema, and air is injected into the colon with the flakes of barium retained in the ulcerated areas as your guide to the location of the diseased intestine.

A flat plate of the abdomen will often help materially in a suspected intestinal obstruction, by showing you the collapsed distal gut in contra distinction to the gas distended proximal gut. Frequently this one examination is sufficient to make a diagnosis.

The recent introduction of opaque dyes allows us to outline kidney pelvis, ureters and bladders after an intravenous injection. The

retrograde pyelogram is an old story to most of you and its accuracy is remarkable. Abnormalities of the kidney, ureters and bladder are graphically shown and interpreted in the language of pathology. These two methods of using opaque dyes have been of inestimable value to the profession.

The right upper quadrant is no longer the impenetrable diagnostic jungle that it was for so many years. With the opaque meal, we can explore the pylorus and duodenum. With the new opaque dyes, we can explore the liver and gall bladder with amazing accuracy and one of the dyes is also a liver function test. Its intravenous injection not only helps to visualize the liver and gall bladder, but the rate of its loss from the blood gives an accurate index of the integrity of the liver. One specimen of blood is taken thirty minutes after the intravenous injection and if more than 12 or 13 percent of the dye is circulating in the blood, care should be exercised in operating; glucose given, etc.; and if 30 to 35 percent is still in the blood, surgery is contra indicated as the liver function is so badly crippled that it will not recover.

Iodized oil injected into the uterus not only outlines that organ but tells of the patency of the tubes, combined with pneumo-peritoneum tumors of the uterine adenexa are shown. Pneumo-peritoneum A P and lateral plate will often show tumors and adhesions in the abdominal cavity.

Tumors of the bladder, the size and shape of the prostate can be ascertained after the injection of air in the bladder and making plates in various positions. Diverticuli often explain residual urine and infection and can be explored with opaque solution and air.

The Cardiologists have demanded the size of the heart and the Roentgenologists have devised many useful methods in estimating its size and now one of the most accurate methods is the outlining of the heart fluoroscopically with the orthodiascope and comparing the resulting diagram with tables that give the known normals for height and weight.

The use of the X-ray in fractures and dislocations is too well known to consider here, but no paper on X-ray would be complete without discussion of the diagnosis of tumors of the bone. The expert roentgenologist has living

pathology that can be classified just as the pathologist studies and classifies sections of this same tumor after removal. The agreement of the two observers is high, provided both are efficient workers in their respective fields and the advantage of the X-ray plate is that the opinion is rendered before Surgery is undertaken. The exact preoperative diagnosis is always to be striven for.

When all is said and done about X-ray technicalities! Nothing on earth can replace brains and experience of the Roentgenologist. There is no technical equivalent of judgment. If the medical profession will realize that the X-ray plate is not a "Ouija Board," to be read by a clairvoyant, but is a technical aid to a roentgenological opinion, we will go forward.

Take the Roentgenologist into your confidence, tell him what you suspect, give him the benefit of your findings, and let him decide what type of examination to conduct. Don't write a note saying "Stereo of Chest" and let the Roentgenologist remain in ignorance of your physical examination, for to get the best results for the patient, he should be the recipient of all the information the Clinician has, so that he may do the most intelligent examination in his power, leaving the choice of modality in his hands. In this way, you will get the helpful information that only a competent roentgenological consultant can give.

#### DISCUSSION

Dr. Robert Taft, Charleston:

The only point I should like to emphasize again, despite the fact that Dr. Rodgers did, is the value of a roentgenologist who is a physician and not merely a technician. It was my pleasure to hear Sir Berkeley Moynihan address the National Congress of Roentgenology several years ago, when he said that just as he liked to be considered a physician practicing surgery, so should a Roentgenologist be considered a physician practicing roentgenology.

Dr. Marion H. Wyman, Columbia:

I doubt if the practitioners of any other branch of medicine use roentgenology as much as urologists do. I have stopped giving an expression of opinion on a urinary tract without having an x-ray examination, for I have been embarrassed too many times in doing so and in finding later that what I thought to be stone was a structure, or vice versa. If a patient has not enough money to pay me and the roentgenologist, I should rather have him pay the

roentgenologist and thus preserve my feeling that I am doing all I can for the patient.

Sometimes a patient may have a tremendously enlarged prostate which does not obstruct the urethra and which only the x-ray can show. It is an added aid. We should not depend upon the x-ray too much, but if it is used as an added aid it will be of tremendous value.

Dr. Rodgers. Closing the Discussion:

Dr. Wyman brought up trying to evaluate the shape and size of the prostate. This is some new work being done, and nobody can lay down a standard yet. We are hoping we can lay down a standard, but it is pretty hard to do right now, as our big clinic has just about stopped; we are not getting the patients any more. Just as we were getting interested there came a halt in our activities, but we hope at some time to lay down some definite rules which will help the man who is going to do a resection of the prostate. We may be able to help you by estimating the size. Of course, with the catheter in situ, it is visible, and you can tell if the urethra deviates from the normal position.

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#### \*LATE TOXEMIA OF PREGNANCY: AN ANALYSIS AND AN EVALUATION OF TREATMENT

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In the final report of the commission on medical education we find this statement, "The high maternal mortality reported in the United States compared with that abroad is a matter of wide comment." It gives the figures as 67 deaths per 10,000 live births in the period of 1926-1928. The other countries vary from 27 to 66 deaths. "Propaganda in regard to this important question has created the impression that the comparative maternal death rate in the United States is more unfavorable than it actually is. There is no satisfactory basis for comparison of the rate in this and other countries because of the differences in the methods of reporting and editing the causes of death. Many deaths are ascribed to puerperal causes in this country which are not so reported elsewhere. Many other factors such

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\*Read before the section of obstetrics and gynecology, Pan-American Medical Association, March 19, 1933, Dallas, Texas.

as race, the number of children, the age of the mother at the time of the first baby, the standard of living, home conditions, the utilization, education, and supervision of midwives, the definition of a 'live birth,' the part assigned to contributory nonpuerperal conditions, and others must be considered before valid comparisons and fair deductions can be made.

"Several major causes of maternal deaths are recognized. It is estimated that forty percent of the maternal mortality is due to infections and twenty-seven percent to toxemias, both of which are largely preventable or controllable. Most of the other causes are the accidents of pregnancy and labor. Inadequate prenatal care, lack of aseptic practice, interference with normal labor (over one-half of the maternal deaths follow operative deliveries,) unnecessary Caesarian sections, and taking risks on the life of the mother in an effort to secure a living baby are important factors in the situation. The operative incidence in obstetrics ranges from ten to twenty-five percent in this country compared with about four percent in Sweden, for example."

The figures on toxemia are the ones that hold our attention at this time. In the period of 1924-1928 the revised maternal death rate was 153.598. Septicemia led with 18.6 percent of cases. The toxemias were second, with 13.5 percent, and hemorrhage third with 4.9 percent, mainly of the antepartum type equally divided between premature separation and placenta previa. One recalls the fact that the former is almost invariably a sequence of toxemia. Probably over three-fourths of the cases of accidental hemorrhage have nephritis or pre-eclampsia as the cause.

The Ministry of Health of Great Britain has put out a report of absorbing interest. Two-thirds of the maternal deaths in that country are coming before the Committee of Maternal Morbidity and Mortality. Their interim report shows 1,596 deaths attributable to pregnancy, of which toxemia is 19.8 percent causative. They studied the reports scrupulously and found a primary avoidable factor present in 39 percent. Kellogg reports mortality of 2.5 percent in non-convulsive types and close to 25 percent in convulsive types. He reviews several series and points out the significant

fact that the smaller the series the more favorable the result. He estimates a mortality of ten to 20 percent.

In North Carolina we have collected data from our confreres in widely divergent localities.

#### Asheville:

Total Births, County and City	2025
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Maternal Deaths (uremic poisoning), nephritis & eclampsia	22
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#### Charlotte:

Total Births, City	1657
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Maternal Deaths (late toxemia complicating pregnancy)	12
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City Stillbirth Incidence is 5.3%	
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#### Kinston:

Total Births	772
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Maternal Deaths	5
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Deaths from Toxemia	2
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#### Wilmington:

Total Births	967
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Maternal Deaths	7
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Eclampsia	3
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Premature Separation of Placenta	1
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For the state as a whole there were 74,743 births and 33,069 deaths. Of these deaths 640 were due to diseases of pregnancy, childbirth and the puerperal state. There were 198 deaths due to late toxemia of pregnancy or 30.9 percent.

#### Durham:

Total Births	1748
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1423 Legitimate—228 Illegitimate	
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1445 Delivered by Physicians—303 by Midwives	
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Stillbirths	97
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65 Legitimate—32 Illegitimate	
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Maternal Deaths	10
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Puerperal Sepsis—2	
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Deaths from Toxemia	5
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Total Deaths in County	773
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Percentage of maternal deaths—1.3 of total	
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Maternal Mortality—.55%	
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During the past year there were 593 births in hospitals where we have services. During the year 36 patients with eclampsia were treated with five deaths, approximately 14 percent.

We all know too well the fact that very little is being found out about eclampsia. If we read the books of Burns and Blundell pub-

lished in 1813 and 1834 we find a fairly accurate description of eclampsic convulsions and the statement that perhaps this is a train of symptoms rather than a disease entity. We also find a description of the changes in the nervous symptoms especially edema of the brain. This is rather remarkable when we read in one of the latest and most worthwhile textbooks the statement that "eclampsia is not a disease but a symptomatic expression of an overwhelming intoxication," and when we consider the work of Fay and Arnold with their thought-provoking observations in regard to edema of the brain and their treatment by dehydration. This does not mean that investigators have been idle. If we follow the literature we find men active along many different lines.

Much has been done in the field of biochemistry. Stander's monograph is probably the most convincing summary. This, with the work of Williams, Peckham, Harrison, Wetterdal and many others, has helped especially in the classification of the late toxemias, particularly the nephritides.

Titus, Willetts, Laferty, Dieckmann, McConnell and other workers have stressed the importance of blood sugar findings. Although many may not agree with the theories expounded, all must realize the value of glucose in the therapy of this condition.

Pathological investigations have continued. Some of the accepted facts are still questioned, and some new contributions made. Johnston and co-workers have stressed the amino acids as possible causative factors, especially when associated with infection. This work is now being carried on in many different localities and appears promising. Most investigators still concentrate their efforts on the liver and kidney. The original observations of Jurgens and Klebs, which were later interpreted by Pilliet and further confirmed by Schmorl, are still contested. However, most people will agree with Williams and his co-workers that the peri-portal necrosis of the liver is pathognomonic when found. Dieckmann has lately done some interesting experimental work in an attempt to reproduce these lesions. He injected tissue fibrinogen in the portal and peripheral circulation and got portal thrombosis. The

findings are accurate, but the application to cause and treatment may be questioned. Such pathology would naturally focus the interest upon a test for liver function and we find King, Moore, Freilheit, Stander, Anderson and a host of other eminent investigators at work on the problem.

MacNider, doing the same type of work as Sazaki, Aschoff and Oliver, but carrying it a step further, has recalled and added some very pertinent facts. These men have shown that certain metallic poisons select the proximal convoluted tubule of the kidney as the site of their attack. After the cell injury the tubule may reform in a normal manner. However, in certain instances where the injury has been greater, MacNider has shown that the repair of the epithelial damage has taken place by their relining with the type of cell morphologically different from normal proximal convoluted tubule epithelium. He has further demonstrated that this second not so highly specialized cell is four to six times as resistant to a second injection of the uranium as the kidney that was not so severely injured and whose cells more nearly approach the normal. He makes the thoughtful suggestion that the cells themselves, by a morphological change, may help in the tissue resistance to certain toxins and not depend on the organism as a whole. At the present time he is at work on liver changes and his preliminary impression is that he can find similar lesions in the liver. During the past two years the endocrines are being searched again and Anselmino and Hoffman think that they are on the way towards explaining that blood pressure changes and urinary depression are definitely influenced with antidiuretic components of the anterior pituitary hormone together with the pressor substance in the blood of the patients with nephropathy and eclampsia.

Acosta-Sison reports in detail the autopsy findings on thirty-eight eclamptic patients. He made the interesting observation that there is a parallel between the autopsy findings and the severity of the symptoms in 89.4 percent of cases. He thinks that perhaps all lesions have a common origin. The liver and kidney are most affected. He did not find the characteristic liver necrosis as a constant lesion. The

suprarenals in one instance showed punctate hemorrhages. There was nothing else of unusual interest. His chief efforts were directed towards the study of the kidney and he separates the cases into those with nephritis and those with no previous nephritis. As a rule, those who present lesions of chronic nephritis live longer after the initial convulsion than those who are otherwise free, though the onset of symptoms is quicker in the nephritis.

During the past four years we have observed 123 patients with severe late toxemia of pregnancy. Eighty-seven of the patients were at Watts Hospital and 36 at Duke Hospital. All of this number were admitted because of some major complication and all of them were definitely ill. We have followed the same classification as Eden in his analysis of a British collective investigation. Cases were recorded as severe in which any two of the following six symptoms occurred: (a) deep coma; (b) more than ten convulsions; (c) pulse rate over 120; (d) temperature above 103 F.; (e) blood-pressure 200; (f) marked albuminuria.

Twelve had been delivered outside and were admitted in postpartum convulsions. Seventy-nine were primipara and 44 multipara. There were 18 deaths, 14.7 percent mortality. All mothers were delivered. There were 31 stillbirths most of which were premature. Twins were present twice. Two mothers had placenta previa and one abruptio placentae. Nine had pneumonia. Some degree of urinary infection was present in over 25 percent. Analysis of the cause of death of the 18 mothers is as follows: one died of shock and hemorrhage after version was done for placenta previa; one died of shock in premature separation of the placenta; one died with anuria and postpartum convulsions and showed acute nephritis; there was one case of spirochetal lung abscess; one of uterine infection with Welch gas bacillus; two died of pyelitis and cystitis; one case of which was suspected of having a blood stream infection though repeated cultures were negative and there was no pelvis thrombosis; four cardiac deaths (two died one-half hour after admission for postpartum convulsions, the other is reported below); six died with pneumonia, two of which were admitted to the hospital with this complication. One of the patients

had measles and one proven cerebral hemorrhages.

One case previously reported deserves special mention: M. C., colored, para 16, six months pregnant, age 42, was admitted to Duke Hospital unconscious. Her blood pressure was 210/136; non-protein nitrogen 40; uric acid 8.8; creatinine 2.1; blood sugar 80; urine showed heavy albumen. The conservative treatment was instituted: spontaneous labor and stillbirth occurred; she regained consciousness. Three days later she showed bilateral pyelonephritis and developed bronchial pneumonia. The respiratory symptoms persisted and the medical consultant diagnosed lung abscess. The patient's general course was downward and she died one and one-half months later. Postmortem revealed a large lung abscess at the right base with a spirillum and fusiform bacillus. Culture from the mouth previously had shown the spirillum. Lung infection probably occurred while the patient was unconscious. D. T. Smith in collecting material for his monograph on fusospirochetal diseases could not find any references to lung abscesses from this cause in eclamptics who had not had an anaesthetic. He advises forced inhalation of carbon-dioxide and oxygen in patients who have been unconscious. Since this time we have had two other fatalities from lung abscesses, however, both of the patients had had inhalation anaesthesia and in one of them the abscess was unquestionably metastatic from the pelvis.

Our blood chemistry findings very closely follow those of Stander. The interesting fact being that his were collected from urban population and ours were rural. It must be remembered that the observations are different in pregnant and non-pregnant women. The only consistent departure in the toxic patients was an increase in the blood uric acid. We did find that the nutrition of these individuals was not as good and that they were more anemic than the average pregnant patient. At the present time Perlzwelg and Payne are estimating the total amino base in the hope that this will be more apt to give information than any single product.

Peckham and his co-workers have made splendid observations on the follow-up and after care of these patients. Our findings agree

with his in almost every particular and we feel the following observations checked by Carter are warranted. No more patients with numerous convulsions tend to develop symptoms of nephritis than those patients who have had few convulsive seizures. The duration of the convulsions seems to have little effect upon the development of symptoms of nephritis. The patients with blood pressure over 200 were more liable to develop symptoms of nephritis than those with lower blood pressure. The percentage of patients showing signs of nephritis increase in those who have shown large amounts of albumin beforehand. Coma and tachycardia apparently have no effect on development of nephritis. Those patients showing high temperatures show nephritic symptoms—the degree of nephritis approximates closely the degree of temperature. Blood chemistry changes in patients who had no previous history of a nephropathy were not indicative. The length of onset of convulsions to the time of delivery and the severity of labor had no influence. In 60 percent of the patients the blood pressure fell to normal within 15 days

yet approximately six percent showed nephritis at the end of the year. Twelve percent discharged with hypertension showed nephritis at the end of a year.

In regard to treatment Rucker has scrupulously and carefully analyzed his own series for the past 27 years and his figures are more conclusive than any set statement. The first group were observed during the period of operative delivery and accouchement force, thirty-eight cases with 12 deaths with 31.6 percent mortality. In the second group of 58 cases the Rotunda technique of irrigation and purgation was in vogue. This was accompanied by 15 deaths a 25.9 percent mortality. Group three embraced 108 cases with six deaths a mortality rate of 5.6 percent. In this group the mode of treatment was first sedation. He used magnesium sulphate and morphine and laid special emphasis on supportive treatment and the fluid balance. We find Upshaw, Bartholomew, McCord, Cook and many others advocating the conservative line of treatment. Eclampsia per se is not an indication for operative delivery.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

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No. 8

Commemoration last year of the 50th anniversary of the discovery of the tubercle bacillus brought forth a number of excellent papers summarizing progress made in the fight against tuberculosis during the past century. Among these Edgar Mayer of Saranac Lake, in his Robert Koch Lecture reviewed the preventive and curative measures in tuberculosis since Koch. Our entire knowledge of infectious diseases and various related branches of learning rests upon the foundation which Koch established. It was he who devised methods which gave science the possibility of defining problems of immunity on an exact basis and which taught the world how to transmit infectious disease experimentally from animal to animal. Koch's great achievement is fittingly commemorated by recounting progress made since then. Excerpts of Dr. Mayer's paper follow.

### PROGRESS IN TUBERCULOSIS CONTROL

Shortly after the staining of the tubercle bacillus had been described in the *Berliner Klinische Wochenschrift*, Trudeau learned from Prudden the technique of identifying the organism. His interest aroused, Trudeau struggling with tuberculosis himself and already familiar with the methods of Brehmer and Dettweiler, founded the first American sanatorium at Saranac Lake.

Not long after the recognition of the bacillus came tuberculin with its rosy promise. While specific tuberculin treatment of pulmonary tuberculosis has proved disappointing tuberculin as a diagnostic procedure to reveal the presence of infection in human beings has become indispensable. The interpretation of the phenomena observed in the tuberculin reaction has brought in its wake numerous problems related to allergy and immunity such as the toxin-antitoxin theory, cellular immunity, the altered course of superinfections, fatal hypersensitivity, etc. The mechanisms of immunity are all limited perhaps by time and degree, operating either

in one phase to fix tubercle bacilli at points of reinfection and thus prevent or retard their spread, or at other times to fail in checking their growth and act destructively against the host. The mechanism of defense has to do also with specific bacteriolytic enzymes, monocytes and leucocytes, but little is as yet known about them. Immunity may be connected as much or more with the tuberculous tissue as with the living tubercle bacilli. Meantime, we must ask ourselves whether we really are imitating nature by aiming to retain hypersensitivity. Should not desensitization, at least during certain stages of the disease, be our aim? Passive immunity measures have for the most part been disappointing and the workers in immunization have yet much to elucidate.

#### *Control Measures Effective*

Public-health measures, however, have succeeded gratifyingly. Sanitation, sputum disposal, registration of consumptives, segregation of patients in sanatoria, early diagnosis campaigns have contributed much to the control of tuberculosis. Pasteurization of milk and the tuberculin testing of cattle have undoubtedly helped to lower the tuberculosis mortality in our country.

The organized efforts now made for the detection of tuberculosis in children promise a continued drop in tuberculosis mortality. Such studies as have already been made indicate a 3 to 4 per cent incidence of childhood tuberculosis and 0.07 per cent of the adult form that could in part have been unrecognized. Perhaps 57 per cent of all adult tuberculosis develops from the cases of childhood tuberculosis. Children of tuberculous families are four times as likely to develop childhood tuberculosis as the non-contact children and twice as likely to have the adult type. Statistical studies are not yet sufficiently complete to permit the generalization that the existence of a previous infection in children either predisposes to, or protects them from, subsequent active disease.

### Vaccination Attempts

The status of BCG is still in controversy. Dissociation of BCG, as well as of avian cultures, into virulent types has been shown to occur in artificial culture media, but not in the human body. The dangers cited in the use of this method of prevention of tuberculosis in children must yet be substantiated. On the other hand, proof of a lasting immunity from its use is lacking and the many statistical studies are faulty. We cannot admit that the results of this prophylactic immunization, quoted as so favorable, have been proved. The use of dead tubercle bacilli (killed by heat) for producing hypersensitivity and relative immunity that can be shown to last for from 12 to 18 months presents no risk; and its possibilities as a transient immunizing agent should make us hesitate to adopt such a generalized use of live bacilli as has been carried out abroad.

### Collapse Therapy

Surgical measures of treatment intended to immobilize the lung have followed the conviction based on experience that rest and fresh air are still our sovereign remedies. The good results of pneumothorax treatment have overcome the former reluctance to apply active measures and have paved the way for more radical surgical methods in the treatment of tuberculosis.

It is possible that, in the past, operations have been used as a last resort in too many cases that were hopeless; and that on the other hand, many suitable cases that could have been saved have not been selected for surgical treatment.

Yet we have not yet taken sufficiently into account the pathological-anatomical nature of the tuberculous lesion nor the physiology and pathology of respiration and circulation. The treatment of advanced pulmonary tuberculosis is to a great extent the treatment of cavities, complete obliteration of which should be the ideal. The persistence of a cavity makes the prognosis grave. A more precise classification of cavities will help to define indications for treatment. The author describes various types of cavities, such as the early thin or elastic-walled or round or oval contour, the thick walled or rigid form, small multiple cavities or honeycombed in densely infiltrated areas; and

comments on the indications for collapse treatment in each of these types.

### The Soil

Aside from measures of direct attack upon the bacillus, advancement has been made also in our understanding of the soil of the host. Much work has been done to learn what factors of the actual disease can be produced chemically. Certain specific proteins and carbohydrates have proved to be toxic to tuberculous animals. The foodstuffs essential for the growth of the tubercle bacillus have been studied. A single bacillus has been isolated and its life cycle followed. Discoveries have been made which shed light on the role played by inorganic elements in nutrition. Precisely how calcium exerts its effects in tuberculosis, so much discussed in the past, has still to be revealed.

Whether calcium therapy in tuberculosis may play a part because of the chemical relationship of calcium to other ions and because of its pharmacological action, rather than as a basis of healing through depositions in caseous tissue; must receive some thought.

Much study also has been given to the effect of the lack of vitamins, coupled with which is the problem of light therapy. Without doubt light and fresh air affect body physiology and the patient's psychology, but exact explanations of the motive of action on the host as well as the definition of the effective spectral light regions cannot be clearly stated.

The effectiveness of the preventive and therapeutic measures applied during the past half century is reflected in the statistical reports indicating the great decrease in tuberculosis mortality in the past 30 years. Since 1900, figures in the United States show a lowering of mortality, from 195.2 per 100,000 to 67.2 per 100,000 in 1930, and it is estimated that by 1937 the level of 40 per 100,000 will be reached in certain of the Northeastern states, unless the world-wide economic depression will interfere. However, the figures for the morbidity rate still remain at a high level, but are difficult of interpretation because of the constant improvement in means of early diagnosis and so forth. The rate of decline in mortality in middle and old-age groups and in young male adults has

continued, but the peak of mortality still remains in the group of young adult women. However, between the ages of fifteen and thirty-five years tuberculosis still remains the chief

cause of death.

*Preventive and Therapeutic Measures in Tuberculosis Since Koch, Edgar Mayer, Am. Rev. of Tuberc., June 1933.*

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "CANCER OF THE BREAST"

Certain subjects should be brought up for consideration at regular intervals, not on account of familiarizing ourselves with any newer knowledge about them, for there is very little, but because we fail to utilize that knowledge which we already have. Chief among these is cancer of the breast. In an article in Southern Medicine and Surgery, Vol XCV—June 1933, Dr. Stuart McGuire of Richmond has discussed this subject from that viewpoint.

In cases of doubtful malignancy, the temptation is to observe the tumor over a period of time. This is unwise for a decision will be just as difficult to make on a second or third examination, except when there has been a rapid growth in which case the loss of time will be greatly regretted. Unless a tumor is definitely benign, an exploratory operation should be recommended at once. Only in this way will cases come to operation early and the percentage of cures increased.

The greatest gentleness should be used in examining tumors of the breast. Any roughness will almost certainly favor dissemination and metastasis in cases of malignancy. Palpation should be made with the flat of the hand pressing the breast against the chest wall, and not picking the breast up between the thumb and fingers. It need hardly be mentioned that very seldom is it advisable to instruct a patient to massage a lump in the breast. In benign tumors it will be of no benefit while in malignant ones it may do great harm.

The prognosis in cancer of the breast depends in great part upon the degree of malignancy, the time of the operation and the completeness of its removal. Over the first factor we have no control but over the last two it should be different. A safe rule is that every tumor of the breast should be removed as soon as it is diagnosed. By following it very little harm will be done and the number of cancer cures will be greatly increased.

## SOUTH CAROLINIANA

J. I. Waring, M.D., Charleston, S. C.

In the possession of the South Carolina Historical Society there is a letter, dated 1775, from the Surgeon of Col. Thomson's Regiment of Rangers, requesting a supply of medicines for the troops. 118 different preparations were included in what seems a rather long list for a military outfit. Most of them are reasonably familiar, while others are of vague significance to the present day practitioner. The letter is as follows:

To Doct. Robert Wilson on the Bay near  
Robert Wells, Charleston.

Sir: Please send the Medicines by the first opportunity and you shall be paid by the Public they are for the use of Col. Thomson's Regiment of Rangers pray don't Disappoint us if you cannot let us have them give the Memorandum to some other person of the faculty, but I Expect you can let us have them your compliance will be much oblige your humble sevt.

Alexander Rogers

Amelia, August 20, 1775

Among the many medicines were included:

Gum Assafetid	P. Stann, ppt
Gum Guiao	S. Absynth
Theriac Andromach	SP. Vitriol Dulc.
Gum Camp.	Sp. Laven Comp.
Gutt. Vita	Sp. Ammon Volat
Pulv. Cort. Peruv ope.	Spt. Vini Rect.
P. Ipecac	Spt. Nit. Dulci
P. Crem. Tart.	Tart. Emetic

Castor Russia	Aq. Rosarum
Caustic Commum	Cantharides
Croc. Metator	Philomen Londinensis
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B. Copabi	Sapo Venet
Borax	Saccs. Saturn
Hermes Minerale	Caust. Lunar
Rad. Valer	Allum Rup.
Sani: Dracon	Argent Vivum
Sper. ceti	Unguent. Basil flav.
Fructus Tamarind	Lapis Cilliminaris ppt
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## NEWS ITEMS

The medico-military course of inactive duty training for Medical Department Reserve officers, which has been held at the Mayo Clinic during the past four years, will again be held this year from October 1st to 14th, both dates inclusive. This inactive duty training will follow the plan so well worked out under the auspices of Colonel George A. Skinner, and the military features will be under his personal supervision.

This short course is equally applicable to general practitioners and specialists. The morning hours are devoted to purely professional subjects selected by the student officers. The afternoon hours pertain solely to medico military subjects, and the evening hours are covered in a lyceum course of general interest.

Application for this course of inactive duty training should be made to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the Government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

Dr. J. R. Young, retiring President of the South Carolina Medical Association and his family, have enjoyed a delightful vacation on the New England Coast. They have returned to their home in Anderson.

Dr. Gus Hart, after a number of years of special training in obstetrics in the hospitals of Baltimore, Maryland, has returned to his home in Columbia for the practice of that specialty. His office is in the Medical Building.

Drs. Francis P. Owens and Harold P. Pope, graduates of the Medical College of the State of South

Carolina in 1932, after completing their internships, have located in Union, S. C.

Dr. George E. Thompson, Secretary of the Fourth District Medical Association, is sending out notices of the meeting to be held in Spartanburg at 4:30 P. M., September 26. Titles of papers to be read should be sent promptly to the Secretary. Dr. J. B. Latimer of Anderson is the President and Dr. J. B. Guess the Vice President of this organization. The Fourth District is one of the larger District Societies of the South, with an annual attendance of around one hundred.

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# The Journal

of the

## South Carolina Medical Association

VOL. XXIX.

GREENVILLE, S. C., SEPTEMBER, 1933

NO. 9

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# The Journal OF THE South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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## EDITORIAL

### FEDERAL MONEY NOW AVAILABLE FOR MEDICAL RELIEF

The following editorial appeared in the Journal of the American Medical Association, Sept. 23, 1933 and as will be seen after reading the new rules just promulgated this money will be disbursed through the organized medical, dental and nursing professions:

"According to a rule promulgated, June 23, by the Federal Emergency Relief Administration, state emergency relief administrators must provide adequate medical service for persons on relief rolls. The administration has now issued rules, which appear as Miscellany (page 1026) in this issue of THE JOURNAL, showing how this is to be done. Money granted to the states from the federal emergency relief fund may be used to pay for medical services and supplies for patients in their homes. All hospital expenses must be paid for from state or local funds. Federal money is not to be used to support existing medical, dental and nursing

relief services but only to augment those services. State and local relief agencies are expected to operate through agreements with the organized medical, dental and nursing professions, state and local. Within legal and economic limitations, the traditional relations between patients and their physicians, dentists and nurses are to be maintained. Professional services rendered patients on relief rolls must be of the same type as those rendered private patients and are to be paid for at agreed rates, due allowance being made for the conservation of relief funds. The common aim, as stated by the administration, is the provision of good medical service at low cost, to the benefit of the indigent patient and the physician, nurse, dentist and tax-payer. It is hoped that physicians will enter heartily into the spirit of these rules and join with the federal, state and local relief agencies in making them effective."

As this editorial states a digest of the recently promulgated rules for the administration of these funds may be found on page 1026 of

the same issue of the Journal and should be read by every doctor. The Officers of the South Carolina Medical Association will promptly take action in behalf of the medical profession of the State. We urge that every county medical society provide for immediate meetings for the discussion of the many problems involved as outlined in the special rules of the Federal Government, after this agreement by the State Association as to fees et cetera has been handed down.

In other words, it is now incumbent upon every member of the South Carolina Medical Association to inform himself through every possible channel as to his rights in the participation of the distribution of this vast sum of money for the relief of the indigent poor. The medical profession has without stint rendered this service practically free hitherto and now the government will step in and assist the doctor by providing a reasonable fee for these services according to an agreement with the officers of organized medicine and the advisory committees to be appointed. This Journal will publish the details as they develop and the members of the Association will be advised as rapidly as possible through other channels.

---

THE CONFERENCE OF SECRETARIES  
AND EDITORS OF STATE JOURNALS,  
CHICAGO

The Secretary-Editor attended the Conference of Secretaries and Editors just held September 22, 23 and was pleased to note that the Conference of the representatives of forty states together with the officers of the American Medical Association considered most of the major problems of the Medical Profession at the present time. Foremost, perhaps, for us at the moment was the discussion of the new rules just issued by the Federal Administrator for relief of the indigent sick of the country. As was to be expected, the experience of the various speakers indicated that the application of these rules would have to be varied in accordance with the demands of local communities. The spirit of the conference indicated that the medical profession of this country through their leaders stands ready to enter into agreement with the government in good faith

and to render the best possible service as medical men have always done whether to the rich or poor.

One of the vital subjects considered was that of the over supply of doctors. This is recognized as of great importance but ways and means of correcting the situation do not appear to be so clear. Probably, little will be done about it any time soon.

Graduate medical education came in for careful consideration the conclusion being that it will be necessary in order that the average doctor may be helped, refresher courses will have to be taken direct to him. This is done now by some states through the extension departments of their universities and seems to work admirably. Medical defense came in for much deliberation. In some states there has been a great increase in suits for malpractice since the economic depression began. In these states special efforts have been made through state medical societies to devise ways and means for making such suits unprofitable and this policy has decreased them rapidly. This is done through state wide cooperation to the one end on the part of the entire profession. In such states every doctor is advised to keep silent about any questionable case until he is sure of the facts at the time the alleged malpractice took place. When the soft pedal is thus put on many suits fail to materialize.

There is a growing sentiment as disclosed at this Conference that the private practitioner should engage more and more in preventive medicine and public health officials less and less as a result thereof.

Several states have made exhaustive studies of the economic conditions affecting the practice of medicine, notably, Michigan and Minnesota. The results of these surveys were discussed at the meeting and much good will come out of them.

The building up of state society programs with a view to making them of greater interest was handled admirably by Dr. E. A. Meyerding of St. Paul, Secretary of the Minnesota State Society.

By a unique commingling of scientific and commercial exhibits the recent meeting at Rochester, Minnesota nearly doubled in attendance. It would seem that from this experience and

that of some other states and especially of the A. M. A. itself a greatly enlarged program of scientific exhibits will draw much larger crowds than any paper reading program. Doctors nowadays want to see something with their eyes at a state meeting rather than listen to papers all day long. This leads to the opinion that such a plan should be put into effect and tried out to the limit at the Charleston meeting of our Association with the assistance of the Medical College in 1934.

Many other matters were brought up, of course, at this conference but all in all the meeting was an extraordinary success and there is evidence that there is a remarkable harmony of the medical profession in this country as reflected by spoken words of their Secretaries and Editors and these leaders appear to be earnestly and unselfishly devoting their thoughts and activities toward the development of more satisfactory conditions for the practice of medicine.

---

#### RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met the nineteenth of June in the usual meeting place with a good attendance and had three interesting visitors, Dr. J. P. Timmerman of Hepzibah, Ga., Rev. Mr. J. Hoskins of Missouri and Dr. H. B. Webb of Johnston, S. C.

Dr. Able reported a case of a child who in a fit of coughing expelled a peanut hull which had been in its bronchus for months.

Dr. R. H. Timmerman commented upon various doctors who lived in Edgefield County many years ago.

Dr. D. M. Crosson read a paper on government or state control of the medical profession in South Carolina.

Dr. H. B. Webb of Johnston, S. C. read an interesting and instructive paper on blood transfusions.

A letter of dismissal was granted Dr. Courtland Beeler who expects to locate in another state.

One new member was received.

The following named officers were elected for 1933-34:

Dr. K. S. Able, President.

Dr. J. D. Waters, Vice President.

Dr. H. B. Webb, Vice President.

Dr. W. W. King, Vice President.

Dr. W. P. Timmerman, Secretary-Treasurer, re-elected.

The President was authorized to appoint the various committees.

Supper was served in The Commercial Hotel.

The next meeting is to be at Dr. Ridgell's and the Ladies Auxiliary will be the host and will serve lunch at six o'clock.

Dr. W. P. Timmerman was away with the R. O. T. C.'s at the Citadel.

Dr. K. S. Able acted as President Pro Tem and Dr. E. C. Ridgell as Secretary Pro Tem.

We regret to record the death of Dr. R. E. Mathias, a prominent physician of Irmo, who died rather suddenly.

The Ladies Auxiliary of the Ridge Medical Society held their recent meeting with Mrs. W. P. Timmerman.

The Second District Medical Society met Tuesday the twenty fifth of July at five o'clock P. M.

W. P. Timmerman, M.D..

Secretary.

## ORIGINAL ARTICLES

### \*TREATMENT OF SKULL AND BRAIN INJURIES

*A. Johnston Buist, M.D., Charleston, S. C.*

Their frequency, their serious threat to life, their immediate and remote morbidity place head injuries in the front rank of grave traumatisms. According to Rawls (1) about 25,000 people die each year; about 100,000 receive head injuries from which they apparently recover, but of this number one half, 50,000, are left with some mental instability, and about 10 percent or 10,000 are totally disabled. It is not at all necessary for fracture of the skull to be present to make these injuries of great importance. Riddock (2), quoting McClure and Crawford, in a report of 441 cases of severe brain injury, states that 171 or 39 percent were unassociated with fracture. On the other hand fracture of the skull may occur with little or no injury to the brain. Naffziger (3) has shown both clinically and experimentally that depressed fractures caused by striking a blow produced both early and late changes in the brain, but that depressed fractures produced by pressure alone do not cause such changes.

In the discussion of head injuries we must understand that fracture of the skull is of secondary importance. It is the brain that lies within the skull to which our chief attention must be drawn and it is to the injury of this organ that we must pay the greatest attention. We must realize that the skull cavity contains no empty space. It is wholly and completely filled with the brain, its membranes, its fluids and its blood vessels. A blow sufficient to cause unconsciousness must produce some changes in one or more of these structures. Unconsciousness may be momentary in duration and the injury to the brain slight or the injury may be so severe in character that death ensues almost at once. Between these two extremes the injury may be of any extent

and of any severity. The mildest injury is that that is known as concussion and is described by Trotter as "a condition of wide spread paralysis of the functions of the brain which comes on as the immediate consequence of a blow on the head, has a strong tendency to recovery and is not associated with any gross organic changes in the brain substance." He describes it as being due to a temporary anemia, but states that it may be fatal if the bulb in which are situated the centers governing respiration and heart's action remain anemic too long. Consciousness soon returns after mere concussion and after the passing of the headache that usually follows, the person, in the majority of cases, returns to normal, but, even in these cases now and then we see a train of neurologic symptoms that make us anxious for a longer or shorter period of time. It was because he had seen neurologic changes follow even the most apparently trivial injuries to the head that I heard John B. Murphy once say that should he receive a head injury so severe as to render him unconscious he would wish that consciousness would never return.

More severe injuries may be accompanied by epidural or subdural hemorrhage, or hemorrhage within the brain substance itself, or into the ventricles, by lacerations of the brain substance, by edema or by injury to or pressure upon the important nerve centers and nerve tracts at the base of the brain.

According to Glasser and Shafer (4) positive neurologic signs occur in 32.5 percent and subjective symptoms are noted in 80 percent of cases of head injury. Where there was no fracture 18.5 percent had positive neurologic manifestations and in 90 percent there were subjective complaints. In fractures of the base neurologic signs predominate because of the presence of the cranial nerves. In simple depressed fractures cerebral disturbances are less manifested than in any other type of fracture.

Aside from the unconsciousness the immediate symptoms are so multiple and varied that in a paper of this kind one hardly has time to

\*Read before the South Carolina Medical Association in the Symposium on Traumatic Surgery, Spartanburg, S. C., April 19, 1933.

discuss them. They usually develop shortly after the injury and what they are depends upon the extent and location of the brain injury. They last also for a varying length of time. The longer the duration the greater the chance of permanent impairment. The younger the patient the less the liability of serious and permanent injury. It is generally conceded that where neurologic signs or subjective symptoms last more than eighteen months that the prognosis for ultimate recovery is poor. The duration is not related to the type of injury.

The remote sequellae of brain injury are either a continuation of the immediate symptoms or make their appearance from about five months to five years after the accident. Hysterical convulsive states often manifest themselves in one to two months after the injury. These remote sequellae in order of frequency are persistent headache, dizziness, mental changes, nervousness, visual complaints, fatigue, diminished hearing, insomnia, convulsive states, body pains, gastric symptoms, numbness, hallucinations and staggering gait.

The proper management of head injuries presupposes a proper conception of the possible pathology present. It must be constantly borne in mind that the skull injury, if it exists, is of secondary importance and that the brain lesion is the chief and immediate thing to consider. Our efforts should be directed first to the preservation of life and second to the restoration of the injured person as an economic asset to the community. The threat to life is due to shock or to an increased intracranial pressure resulting from hemorrhage or edema. Hemorrhage if continued will result in such pressure upon the vital centers that they no longer function and in case of edema the pressure may be so great inside the unyielding cranium that anemia of the brain results and death occurs from that cause. Edema occurs to a greater or less extent in all cases. It is the result of a hypersecretion of cerebrospinal fluid by the choroid plexus, overdistending the ventricles and pouring the excess of fluid through the foraminae of Magendie and Luschka into the subarachnoidal space. Normally this fluid circulates and is absorbed into the dural sinuses by the pachionian bodies, but when in excess fills this space, pours out into the spinal canal

and manifests its presence by an increase in the intraspinal pressure. The problem, then, is the treatment of the primary shock and the appropriate management of the cerebrospinal fluid, the cerebral edema and consequent intracranial pressure and the control of hemorrhage.

Rest and quiet are essentially necessary in the treatment of shock; unnecessary haste in rushing the patient to the x-ray room is not only foolish but harmful. Remember always that the fractured skull is of secondary importance and that unnecessary change of position and location, shifting the head from side to side as it is necessary to do in x-ray work, will only increase the intracranial damage. The patient who is going to live loses nothing by delay in having a picture taken and one who is going to die is not saved by x-ray work.

So impressed is Temple Fay (5) with the necessity of at once treating shock that he advises only the controlling of bleeding where a scalp wound exists, its cleanliness and dressing. He advises against even the delay necessary to suture the wound so necessary is it to at once combat shock and lessen the tendency to intracranial pressure.

To combat shock we should insist upon quietness, rest, dryness, heat and the use of those drugs that will prevent the loss of fluid from the skin so that blood volume may be maintained. Atropin, pituitrin, strychnine, ergot and ephedrine. These produce vasoconstriction of the peripheral circulation. Only in emergency and failing circulation should cardiac stimulants be used.

As soon as shock is controlled, or even in shock if there is evidence of intracranial pressure, a spinal puncture should be made to ascertain the presence and degree of intracranial pressure. If bloody fluid is obtained it indicates a lacerated brain or the rupture of a surface vessel. Clear fluid does not exclude the presence of a subdural or epidural hemorrhage, for these spaces do not communicate with the subarachnoid space. How often and how completely to tap and drain the spinal canal is a debatable question. Fay advises withdrawal of all fluid from time to time for ten days, especially if the fluid is bloody, because blood will obstruct the flow of cerebrospinal fluid

into the subdural spinal space. Dandy (5) does not believe in spinal puncture for the relief of pressure at all. The scheme proposed by Ochsner is probably the best and for its intelligent application a manometer is essential. If the cerebrospinal pressure is above ten millimeters of mercury it is abnormal and it should be slowly removed to reduce the pressure one-half of what it is above normal. Care must be taken that too rapid evacuation of the spinal fluid does not produce a herniation of the medulla into the foramen magnum with sudden death as a result of pressure upon the vital centers. For the purpose of lessening the tendency to edema of the brain dehydration must be resorted to by rectal or oral administration of magnesium sulphate and the intravenous injection of 50 percent glucose in hypertonic solution, about 100 cc being used. This may be repeated subsequently.

After combating shock and making our attempts to dehydrate the brain we can proceed with the x-ray examination. In cases of uncomplicated depressed fractures we can safely wait for days before operating. In compound fractures we should operate early and we should also operate in cases of suspected middle meningeal hemorrhage. In cases of comatose patients with papilledema who do not respond to spinal drainage or dehydration after four or five hours this latter condition should be suspected and a subtemporal decompression performed. Spinal drainage cannot relieve subdural hemorrhage. In doing a subtemporal decompression we are operating upon the thinnest portion of the skull, the middle meningeal artery is exposed which is the most common site of hemorrhage, the subtemporal lobe with its silent area is exposed and drainage of the middle fossa at its lowest point is allowed. The dura should always be opened for the purpose of examination. Care must be taken that an edematous brain does not herniate into the wound as the result of intracranial pressure. Compound and comminuted fractures with the bone penetrating and lacerating the brain should be operated upon as soon as safety permits. In all other cases operation should be delayed.

When shock is over and when there appears no need for immediate operation restlessness

must be combated by the use of bromides luminal and chloral by mouth or rectum.

Morphine should be avoided because of its effects on the pupils, its tendency to mask the symptoms of an oncoming stupor and because of its depressing effect upon the pulse and respiration. Elevation of the head, the use of the ice cap and frequent reading of the respiration, the pulse rate and blood pressure should be made. The pulse should be kept below 120 if possible and the diastolic pressure should not fall below sixty millimeters of mercury. The idea is to maintain a good circulation in the brain so that repair can occur and the highly specialized cells will not be destroyed.

Infection and subsequent meningitis must be guarded against not only in compound fractures of the vault but in basal fractures with rupture of the ear drum or into the nasal cavity. In fractures through the frontal sinus sneezing and coughing must be avoided so as to prevent the formation of a pneumatocele. The presence of a rhinorrhea is almost pathognomonic of a communication with the skull cavity.

With the passing of the symptoms that threaten life the responsibility of the case does not cease. We must bear in mind that the brain has been traumatised and that as a result of this injury symptoms may develop at a later day. Fay stresses the necessity of limiting the intake of fluids to not more than thirty ounces in twenty-four hours as long as the spinal pressure is above normal and then to materially limit the intake of fluids, sweets and salt for five or six months, the diet being a dry one. He says that much of the subsequent headache, mental dullness, impaired memory and concentration can thus be avoided. Restricted exercise, freedom from worry and mental work must be insisted upon for many weeks and an atmosphere of anxiety avoided for fear that neuroses may appear and add to the difficulty of diagnosis of neurologic manifestations dependent upon some real pathology.

Finally head and brain injuries belong as much in the realm of the neurologist as that of the surgeon and should the latter not be possessed of sufficient neurological knowledge he can most advantageously, both for the patient and himself, associate with him one possessed of such knowledge, so that the best results for

these seriously injured patients may be obtained.

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- (7) Kennedy and Wortes'—How to Treat Head Injuries and Appraise Them—Jour. A. M. A.—April 16th, 1932.

#### DISCUSSION

Dr. O. B. Chamberlain, Charleston:

There are few departments of medicine which have come more into prominence lately than that of traumatic surgery, particularly of the head. Some years ago it was a rare thing to have marked trauma of the head; now it is a condition that meets practically anyone who is practicing medicine.

These papers have given me pleasure, and I was particularly interested in Dr. Buist's paper. There are just one or two minor points I wish to discuss with you. One of them, as Dr. Buist pointed out, is the necessity of a very careful examination of these patients. That was brought to my attention some time ago in a case where a boy had been struck down by a truck. He sustained an unquestioned intracranial injury. Now, in this case, the question of operative procedure was brought strongly into prominence by the fact that he could not use his left arm. There was reason to think one should go in, but rather careful examination showed that the use of the left arm was impaired by injury to the brachial plexus, and he had therefore external peripheral injury. So it seems to me that in every case in which there is injury to the head one's procedure should be governed by most careful and painstaking evaluation of all the factors in the case.

Another point I think should be emphasized is the after care. As Dr. Buist said, the view of Temple Fay concerning the mechanics of fluid formation governs the field nowadays. The question of the sequelae to these head injuries is very, very important. It is a question not only of what is going to happen when the patient is in coma or semicomia but

what is going to happen during the next six months—of the proper handling of these cases during the ensuing months, the proper fluid balance, the proper rest. If we are going to avoid the convulsions, the chronic headaches, the dizziness, the changes in personality, we must pay as much attention in the months following the injury as immediately thereafter.

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#### ROCKY MOUNTAIN SPOTTED FEVER IN SOUTH CAROLINA

By O. B. Mayer, M.D., Columbia, S. C.

It seems of sufficient importance to report to the medical profession the appearance of another case of Rocky Mountain Spotted Fever, eastern type. This case with the two reported by Doctor Montgomery(1) makes three cases in South Carolina to date. The report of ten cases in 1930 by Litterer(2) can not be identified from the State Board of Health records.

This disease can no longer be thought of as peculiar to the western states. The rapid means of transportation favors the spread of the disease and, no doubt, more cases will be recognized locally, as they are occurring more frequently in neighboring states. Spotted fever must not be confused with typhus fever, which is more prevalent, according to our State Board of Health, than the average physician is aware. It is a definite clinical and pathological entity, caused by the bite of an infected louse or flea.

The disease characteristically occurs in the late spring and early summer, corresponding to the life habits of the dog or wood tick which spreads it. The average incubation period is from seven to ten days. The disease should be suspected after a few days' prodromal symptoms of general malaise, back, muscle, and head pains, followed by a chill, high fever, 104 to 105 degrees, with the appearance in two or three days of a measly-like eruption, pinkish in character; later brownish or purplish, exhibiting petechial changes. The history of finding a tick usually establishes the diagnosis. The fever continues high and mental confusion or coma ensues. The eruption spreads in varying stages or crops, possibly three, from the wrists, ankles, and legs, over the trunk, affecting the head and neck less or not at all. The spleen is palpable, otherwise the physical examination reveals nothing characteristic. There is no adenopathy or local identification of the bite. Toxemia af-

fects chiefly the circulatory, brain, and nervous systems. Urinary suppression is not uncommon in adults. Blood picture is not striking. Usually a moderate leukocytosis is present. The serological diagnosis is made by the non-specific agglutination with "B" *Proteus* X<sup>19</sup>, known as the Weil-Felix test. Duration averages twenty-nine to thirty-six days. Complications of sloughing of the soft parts, neuritis, phlebitis, and bronchial pneumonia, may occur. Mortality varies from four per cent to ninety per cent, depending somewhat on the locality.

The present case occurred June 1933, in a white male aged twelve years. He was ill one week prior to hospitalization for thirty-three days. Recovery was without incident except for furunculosis during the later stage. The diagnosis was confirmed by the hygienic laboratory in Washington in agglutination 1-320. The case history will be further omitted for it was classical in detail. Treatment is symptomatic. A prophylactic vaccine is available, but the therapeutic vaccine is ineffective.

For those finding further interest in the disease, the attached bibliography may be helpful.

Acknowledgment is given to Doctor J. S. Matthews of Denmark, who referred the case.

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#### \*OBSERVATIONS ON A RECENT VISIT TO MAYO AND CRILE CLINICS

By L. H. McCalla, M.D., Greenville, S. C.

Many of the large clinics and hospitals have felt the depression as well as individual practitioners which is noticeable by the prevalence of emergency types of operations being done rather than the elective group. I understand, however, that this condition has improved in the past few weeks and patients are once more availing themselves of necessary medical treatment earlier.

These large medical clinics demonstrate some of the advantages of group practice to the patient as well as to the physician. Because of the highly developed specialization in medicine to day and the expensive equipment that goes with it, there is no wonder that group practice is growing in popularity. Besides the personal satisfaction of such an arrangement, a group should operate more economically which is quite essential in meeting the demands of flat pocket books.

There are apparently so many things in progress at these large hospitals that it is impossible to see everything. Some of the things were new to me others were not and further some debatable points were cleared up in my mind for I feel that these clinics are in position to give out authoritative information.

*Research laboratory.* At one of the clinics there was an apparatus of great sensitivity for measuring heat radiation, placing ones finger against the apparatus the amount of heat radiated by any particular subject could be accurately measured. There was noted a difference in different individuals. It was thought that the measurement of this difference would have diagnostic value in certain diseases. For instance in over activity of the thyroid gland the amount of over activity might be measured by this means. Another apparatus, an electric current with a certain frequency and voltage was passed through a tube containing a certain medium (I am sorry that I can't give the exact details). A recently removed tumor was placed

\*Read before the Greenville Study Club, August, 1933.

over a window of the apparatus. If the tumor was of a rapidly growing type frequently repeated loud sounds would be emitted. These sounds were lost after a short period of time until the actively dividing cells had spent themselves. In the case of a slow growing tumor being placed over the apparatus the sounds were not as distinct and of lesser frequency. It was thought perhaps this machine might be developed in a practical way and have value in estimating the degree of malignancy in a recently removed tumor growth. To theorize further it might have value in determining the type of growth preoperatively.

*The Elliott Machine.* For treating pelvic inflammatory disease was being used at one of the hospitals. The machine has the general appearance of a small diathermy. Leading off from it are two small rubber tubes which are attached to a small rubber bag. The bag is inserted into the vagina, the switch turned on and the bag distended with water to fill the vaginal vault. The temperature of the water was raised to 113F. and maintained for forty-five minutes to an hour and the treatment given every day. Some cases were reported who had temperatures of 104F. in which the temperatures after the fifth day of treatment became normal. Large masses that filled the pelvis were said to disappear in a very short while and the patient discharged as cured. Contrary to recent teachings this heat treatment was given following septic abortions with good results. The machine I understand is not absolutely fool proof as some burns have been reported where the machine had been turned on and forgotten allowing the water to reach a temperature entirely too high for therapeutic worth.

Oxygen Tents are being used quite extensively. It is not uncommon to see three or four in use on one floor which is certainly an improvement in an economical way over the oxygen chamber and quite a contrast to the very inefficient way of trying to administer it through a tube attached to a funnel. Oxygen efficiently administered is often life saving in certain cases and certainly adds much to the comfort of many others.

*Suprarenal Nerve Innervation.* Dr. Crile talks very interestingly of this operation and showed several cases that had been operated

upon. Two of the cases had thyroidectomies done at former operations without the usual improvement. A second operation had been done removing the remaining portion of the thyroid and still they were not well. The operation of suprarenal innervation was then done and according to the statement of the patients marked improvement in their condition followed. This operation seems applicable in patients who have symptoms of thyroid disease perhaps but not enough evidence to make a diagnosis of Toxic Goiter; as in individuals of a highly nervous temperament who develop symptoms of peptic ulcer and are not relieved by the usual medical or surgical treatment. Dr. Crile spoke of one case who had been operated upon five times for symptoms of ulcer without benefit that was finally relieved by this operation. The operation is strictly a physiological one, rather technical in detail and in the hands of Dr. Crile has very definite value.

The one outstanding change in surgical therapy has been in prostatic resection with the resecto-scope and that was the predominant operation being performed during my stay in Rochester. I was genuinely interested in seeing some of these operations performed as well as seeing some of the patients who had the operation a few days previously. The patients were certainly well pleased with the results and contrasted with the perineal or supra pubic prostatectomy they were decidedly more comfortable. It appears that this operation has practically replaced the older procedure. I understand that a very small percentage of cases at this clinic, during the past twelve months, were done other than with the resecto-scope.

I was gratified to hear from every source that a South Carolinian is given full credit for being a pioneer in this field and his ability recognized.

*Peritonitis Vaccine* is being used preoperatively at one of the clinics before resections of the large bowel for carcinoma. They feel that this alone has reduced the primary mortality in these operations ten per cent which appears to be quite a step forward as this operation carries a rather high mortality.

*Practical Value of the X-Ray and Fluoroscope* was demonstrated quite thoroughly at one of the hospitals. A patient had multiple stones in the kidney pelvis. The kidney was delivered

in the wound, the pelvis opened and all of the stones that could be felt removed. The X-Ray machine was pulled up to the operating table and the kidney fluoroscoped and a plate was also made which showed another stone. This was removed and another film made, a small fragment still remained which was finally located and removed.

I was impressed with the thoroughness of this procedure and in this case the absolute necessity of it being done. One wonders whether recurrent stones are in fact not recurrent ones but particles that have been left or stones altogether overlooked. This demonstration certainly suggests that as a possibility.

*Spinal Anesthesia* is more generally used than several years ago. It is not used routinely but in selected cases appears to be ideal. Smaller doses are given, usually not more than one hundred mg., and in less concentration. Older people stand a large dose very poorly and it

should be given with caution. A definite technique is followed in administering it. The blood-pressure is carefully observed during anesthesia and controlled by administering ephedrine. Systolic blood-pressure maintained between eighty and one hundred is ideal for some fall in blood-pressure is necessary for good relaxation. This anesthesia is especially applicable for operations below the diaphragm while for anesthesia above this point is extremely dangerous. Nausea during anesthesia is best controlled by the administration of oxygen.

I have given a brief summary of some of the things I saw on this visit and which I thought might be of general interest and I hope will be of some value to you. Whether or not we agree or disagree on some of the new things that come to our attention from time to time new things indicate progress and only time will prove their worth.

## SOCIETY REPORTS

### COLUMBIA MEDICAL SOCIETY

#### *Resolutions on the Death of Dr. Henry William Rice*

On Saturday afternoon, June 24, 1933, at 5:30 P.M., the life of Dr. Henry William Rice ebbed slowly out.

This was a sad hour for the Columbia Medical Society, for Dr. H. W. Rice was one of our most useful, most reliable, most valued members. A man thoroughly respected by every member of this Society. Always a quiet, gentle, retiring and unostentatious gentleman, but always deeply studious, and most unusually well-informed. Dr. Rice was a student of Medicine up to the hour of his fatal illness began.

He was also a firm and steadfast believer in what he considered were right principles. He was never a compromiser in what he believed to be right. You could always depend on it that Dr. Henry William Rice would be standing straight up, with his head erect, and looking to the front, and that no matter how the fight ended, he would still be there when it was over.

His untimely death was also a bitter loss to the poor of this City. For to Dr. H. W. Rice the Practice of Medicine was a Profession of Service; not a means to acquire gain. He always gave freely of his time and of his ability to those whom he could ex-

pect little or not financial return. The ever increasing strain to acquire money seemed to have no attraction for him. To him the "Hippocratic Oath" appeared to be a very real thing; and he lived up to its precepts in every possible way.

Therefore:—Be it resolved by the Columbia Medical Society—

That in the death of Dr. Henry William Rice, the Columbia Medical Society has sustained a grievous and irreparable loss.

That to his Daughter and to his relatives we offer our sincerest sympathy, for their loss is far greater than ours.

That the Secretary be requested to record this tribute in the Records of our Society—

And that he furnish a copy to the family of our late member; and also furnish a copy to the Journal of the South Carolina Medical Association; and to the local daily papers.

#### Committee:

Julius H. Taylor  
D. Shuler Black  
James H. McIntosh

Adopted Aug. 14, 1933  
Columbia, S. C.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

SEPTEMBER, 1933

No. 9

The annual meeting of the National Tuberculosis Association, held jointly with the Canadian Tuberculosis Association at Toronto, June 28-30, drew together a large representation from both countries, as well as two distinguished visitors from England. Dr. Esmond R. Long, of Henry Phipps Institute, reports in this number brief abstracts of the papers and symposiums of the Pathological section.

### WHAT IS NEW IN TUBERCULOSIS PATHOLOGY

Sir Humphry Rolleston, who reviewed the subject of non-pulmonary tuberculosis, dwelt especially on chronic hyperplastic tuberculosis of the intestines and the accompanying hyperplastic peritonitis. He made the interesting suggestion, proposed by preceding investigators, that these unusual forms of tuberculosis, in which tubercle bacilli are difficult to find, might be due to different phases of the several stages of the life cycle of the bacillus of tuberculosis, recently described by several investigators.

Drs. Petroff and Winn of Trudeau, New York, reported further developments in their study of colony variation in the growth of avian tubercle bacilli. From a single strain of this bacillus they separated out four types, the extremes of which formed "smooth" and "rough" colonies on culture media and were respectively virulent and avirulent for chickens.

A paper presented by Dr. Daines of Salt Lake City may explain some of the positive tuberculin reactions reported from time to time leading to slaughter of cattle subsequently proved not to be tuberculous. He described acid-fast bacteria, apparently not tubercle bacilli, obtained from certain skin lesions of cattle reacting positively to tuberculin, but not tuberculous, as shown by post-mortem examination. The bacteria, which appeared to be a previously undescribed variety, and the skin lesions they caused, evidently induced a sensitization to tuberculin.

A complicated life cycle of the tubercle bacil-

lus, in which several granular phases occur, was reported by Dr. Kahn of Cornell University. He embedded single colonies of tubercle bacilli growing on solid culture media and sectioned them. Stained by the usual methods for tubercle bacilli, sections showed zones of acid-fast, partially acid-fast and non-acid-fast bacteria, conforming closely to the types previously described by Dr. Khan in his cultures from single organisms.

At a later meeting Dr. Wyckoff of the Rockefeller Institute, New York, also presented a paper on the growth of tubercle bacilli, which was apparently not in agreement with Dr. Kahn's work. Dr. Wyckoff used the ingenious method of motion photography of the growing bacteria on clear solid media. Several kinds of tubercle bacilli, chiefly derived from tuberculosis of cold blooded animals, reproduced by the simplest of all methods, elongation and fission into two new organisms like the original.

Another paper, presented by Drs. Soper, Alpert and Adams, dealt with the relative immunizing properties of a "smooth" type variant of bovine tubercle bacilli, killed by heat, the well known living attenuated BCG strain of bovine bacilli, and living human type bacilli. The heat-killed bacilli caused the greatest protection. Dr. Willis of Detroit described a surprising frequency of tubercle bacilli in the urine, as well as sputum, of children with childhood type tuberculosis.

The second symposium was devoted to silicosis. (A forthcoming number of Abstracts will be devoted to this subject).

### *Progress in Research*

A third symposium was given to reports from investigators working under grant from the National Tuberculosis Association. Dr. Richardson of Cornell University reported experiments by himself and colleagues on the respiration of tubercle and related bacilli. The most significant fact was the high sensitivity of the pathogenic acid-fast bacteria to deprivation of oxygen, a characteristic probably playing a role

in the limitation of their growth in the animal body.

Several papers dealt with the proteins of tubercle and related acid-fast bacilli. It was brought out clearly by several investigators that the pure proteins of these bacteria are capable of sensitizing the animal body so that subsequent injections of the same material into the skin elicit an inflammatory response much like that caused by tuberculin in the tuberculous animal. Dr. Aronson of the Phipps Institute, reported that while the protein BA100 almost exactly paralleled Old Tuberculin as skin-testing material, it possessed the capacity, on repeated injections in children, of sensitizing the skin so that false positive reactions were given with later higher dosages.

Dr. Sabin and colleagues of the Rockefeller Institute reported results of similar import from animal experimentation. Their results on inoculation of animals sensitized to one of the proteins of the tubercle bacillus also brought out clearly that the sensitization conferred no increased resistance to infection.

Dr. Seibert of the Phipps Institute reported experiments indicating that the sensitizing character was referable to the high molecular weight of the proteins, and showed that by two methods it was possible to reduce the molecular weight and prepare pure protein substances with full skin-testing potentiality and accuracy, but virtually devoid of sensitizing character. The first consisted in boiling one of the purified proteins in weak alkali (pH 9.0-10.0) and again isolating the protein. The second in isolating the protein directly from an Old Tuberculin prepared by the usual heating method, but derived from a culture on a non-protein synthetic medium instead of the usual glycerol-peptone-meat infusion broth.

From the discussion following, which was opened by Dr. Long, it seemed clear that the preparation finally to be recommended to replace the O. T. of common use, was a protein of non-sensitizing character but full potency isolated by one of these methods, and Dr. Long reported that a plan was under way to make an objection-free preparation available shortly.

Two papers were presented by Drs. Mariette, Fenger, Duncan and others from the Glen Lake Sanatorium, which showed a surprising lack of

specificity in both the pure lipoids and pure proteins of the acid-fast bacilli when used respectively in serological and skin tests. Purified protein prepared by the method for MA100, but from timothy instead of tubercle bacilli, appeared even more potent than MA100 in eliciting skin reactions in tuberculous subjects.

At the final session Dr. James Alexander Miller of New York called attention to the newly recognized frequency of hematogenous as well as bronchogenic spread in pulmonary tuberculosis.

Drs. Wiseman and Doan of Ohio State University reported progress in their work on blood changes in tuberculosis, showing that not only do important changes in the number of lymphocytes occur, but that qualitative variations, referable to age, occur in the lymphocytes, which are of considerable prognostic significance.

Drs. Schroder and Park of New York compared the effect of dead tubercle bacilli and living BCG in inducing tuberculin sensitiveness in children. Positive Mantoux tests occurred in almost all of the children receiving BCG, and in only about a third of those getting dead bacilli, and sensitiveness lasted longer in the former group.

Dr. Burke of Ray Brook, New York, showed that it was possible by intratracheal injection of tubercle bacilli in normal and tuberculous rabbits to produce forms of tuberculosis roentgenologically and pathologically comparable to childhood and adult tuberculosis in man, a result of obvious value for studies on the pathogenesis of the two types of the disease.

Drs. Johnston, Howard, and Maroney of Detroit gave some long-desired data on the development and course of the tuberculin reaction following first infection in childhood. Frequent tuberculin testing and X-raying of a group of children showed that the progress of healing childhood infection from primary lung infiltration to calcification of the corresponding hilum lymph nodes, averaged about two years, during which the tuberculin reaction became positive, reached a maximum of intensity, and then waned to a lower level.

An experimental study by Dr. de Savitsch and colleagues from the University of Chicago on the effects of a combination of irradiated ergosterol or parathormone with tuberculin in

tuberculous animals, not only confirmed previous results on the calcifying action of the first two substances for tubercles, but indicated also that it may be possible to enhance this effect by

increasing the blood supply around tubercles by the focal reaction following injection of tuberculin.

## SOUTH CAROLINIANA

J. I. Waring, M.D., Charleston, S. C.

The Relation of the Small Hospital to the Medical Profession in the Community—J. M. Beeler, Spartanburg. *Sou. M. & S.* 95 Aug. 1933—420.

Pleas and pointers for better understanding between the lay boards, medical staffs, and nursing staff of the small hospital with relatively limited means.

A Bronchoscopic Review—E. W. Carpenter, Greenville. *Sou. M. & S.* 95 Aug. 1933—427.

The author finds that the scope of bronchoscopy extends from resuscitation of the newborn over the more usual field even unto rachitic bronchitis.

Hyperthyroidism and Neurocirculatory Asthenia—Differential Diagnosis—W. H. Prioleau, Charleston. *Sou. M. & S.* 95 Aug. 1933—432.

A discussion of the difficulty of making an accurate diagnosis in the incompletely developed states of these two diseases.

Urinary Test as Index of Absorbtion of Gall-Bladder Dye When Given Orally—H. Rudisill and M. W. Hemingway, Charleston. *J. A. M. A.* 101 Aug 19, 1933—593.

A test devised by the authors for the presence of iodine in the urine as an indication of adequate intestinal absorbtion of the sodium

tetraiodophenolphthalein used for visualizing the gall-bladder

The Injection Treatment of Varicose Vains—S. O. Black, Spartanburg. *Sou. M. & Surg.* 95 July 1933—366.

A discussion of the development of this method, the indications, and the technique. It is said to be especially applicable to the healing of varicose ulcers. Sodium morrhuate or quinine hydrochloride and urethane are used.

Parathyroid Tetany—W. H. Prioleau, Charleston. *Sou. M. & Surg.* 95 July 1933—383.

An unusual case of chronic tetany following thyroidectomy. While the blood calcium was not low, all the varied symptoms cleared up with the relief of the tetany. The patient continues after some months to take parathromone, though symptomatically well.

Osteopetrosis—O. B. Mayer and T. A. Pitts, Columbia. *J. AM. A.* 101 July 1, 1933—22.

"Marble Bones" apparently results from some unexplained calcium metabolic disturbance. Secondary anemia, dental caries, optic atrophy, enlarged spleen, and greatly increased bone density were the features of this case. Heredity apparently influences the occurrence of such cases.

## EYE, EAR, NOSE AND THROAT

J. U. TOWNSEND, M. D., F. A. C. S., CHARLESTON, S. C.

MALIGNANCIES OF THE UPPER AIR PASSAGES: A STATISTICAL REVIEW  
SAMUEL SALINGER, M.D., ANNALS OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY, SEPT. 1933.

PAGE 850

Classification based on the radio sensitivity of the growth falls into three groups: (1) Lympho-epithelioma, (2) transitional cell carcinoma, and (3) squamous cell carcinoma. Those in group one are most sensitive to radiation and those in group three least sensitive.

There are numerous subdivisions of these groups, exhibiting gradations of sensitivity according to the type and distribution of their cellular elements. Naturally, if the type of tumor is carefully studied from this point of view the degree of radiation can be more accurately planned and the prognosis more definitely established.

Properly supervised radiation caused no changes in bone or cartilage.

In the main, however, the Coutard method has been accepted with much hope and enthusiasm and wherever the circumstances would permit has been employed.

### *Epiopharynx*

There are very few cures by the older methods except in the sarcoma cases, which are more amenable to radiation than carcinoma.

On the other hand, since employing the Coutard method some authors are showing astounding primary results. For instance, Kraus has healed eight out of ten cases (80 per cent) by protracted fractional X-rays and advises against removal of the glands.

### *Sinuses and Maxilla*

In most clinics malignancy of the sinuses and upper jaw are considered operable and are so treated. Either radical surgery or surgery plus

electrocoagulation are generally employed, followed by radium or X-rays. At the present time surgery seems to hold the foreground with radiation playing a secondary but important role.

### *Hypopharynx*

Two facts stand out prominently: first, that the sarcomas are much more amenable to radiation than the carcinomas; and second, the results under the newer methods of Coutard are far better than the older technic. Coutard's results shows 20 per cent recoveries up to two years; after that point the percentage falls rapidly.

### *Tonsils*

Malignancy of the tonsil is one location in which the prognosis has been changed from the hopeless to the definitely favorable. Under the old radium technic Berven treated twenty-eight cases with 10 per cent recoveries for one year and no cures beyond that period. With the newer teleradium his series of eighteen, 50 per cent were healed one year; 44 per cent, two years, and 39 percent, three years.

### *Larynx*

There is a tendency to avoid radical surgery where the prospect of complete eradication of the growth is doubtful and to rely on intensive radiation. They show percentages of recovery all the way from 20 to 63 per cent for the inoperable carcinomas of the larynx.

Finally there is this to be said: That carcinoma of the upper passages is emerging from the dreary past to a more hopeful future. The technic of Coutard, Berven, Hegener and their co-workers is very diligently studied and employed wherever the physical means are at hand, and we may confidently expect within the next five years to see these methods vindicated in still higher percentages of recoveries.

## S U R G E Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "MALARIA AND SURGICAL DISEASES"

Malaria is so generally considered as a problem solely for internists that those doing surgery are prone to overlook it. However it is of importance in surgical diseases both from the standpoint of simulating them and from being a complication. It may assume such unusual forms that often it is not recognized.

In the American Journal of Surgery Vol. XX June 1933, Dr. R. L. Rhodes of Augusta, Georgia has given his recent experiences with this disease. While malaria seems to have occupied an unusually prominent part in his practice, it is no doubt due greatly to his being on the lookout for it. It will be well to consider some of the conditions he describes.

Acute appendicitis is very commonly simulated. The symptoms may be classical. The points of differentiation are that in Malaria the fever is higher and there is very little muscle rigidity in the right lower quadrant. A careful search should be made for the malarial parasites.

Several cases of severe uterine hemorrhage were encountered. The presence of fever and

essentially negative pelvic examination lent suspicions. The diagnosis of malaria was established by the finding of the organisms or the clearing up of the symptoms upon giving quinine.

Among the most interesting cases are those with biliary symptoms. In some the diagnosis was early established and the condition cleared up on proper treatment. Others had been subject to gall bladder surgery following which they were not relieved until the malarial infection was recognized and treated. The author reports several cases of polyarthritis both acute and chronic, apparently caused by malarial infection.

Malaria may be quiescent and yet stirred into activity by an operation. It not infrequently is the cause of unexplained fever after operation. The organisms should be carefully sought for, and even when not found it is often wise to give quinine.

*Ed. Note:* My own experience, while not so extensive, coincides with that of Dr. Rhodes especially as regards acute appendicitis, acute pyelitis, and fever after operation.

### POSTGRADUATE COURSE

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## COLUMBIA MEDICAL SOCIETY

The regular Scientific meeting of the Columbia Medical Society was held at the Columbia Township Auditorium on August 14, 1933.

The meeting was called to order by the president, Dr. F. M. Durham, at 8:30 P. M.

The minutes of the previous Scientific meeting were read and adopted.

Dr. C. G. Spivey presented a case of a negro boy, age 13, with a Blood Pressure reading of 260 Systolic. He stated that the eye-grounds and urological findings were negative. The Blood Pressure reading was the only positive finding. Those discussing this case were: Drs. Rodgers, Josey, Plowden, Gibbs, Mayer, and Horger.

The first paper of the evening was presented by Dr. O. B. Mayer, "Rocky Mountain Spotted Fever." A brief history, etiology, symptoms, diagnosis and treatment of this disease was presented. Dr. Mayer followed with a presentation of a case with this disease which had come under his care recently. Discussion was opened by Dr. Applewhite of Mississippi, who is connected with the U. S. Public Health Service. The paper was also discussed by Dr. J. A. Hayne and Dr. Mayer closed the discussion.

The second paper was presented by Dr. J. Heyward Gibbs and Dr. George H. Bunch, "A Neurological Study of One Hundred Patients Following Spinal Anaesthesia." Dr. A. F. Burnside was called on to outline the technic of preparation and injection of the spinal anaesthetic. Dr. Gibbs stated that in the series of cases operated upon under spinal anaesthesia, there was no gross spinal cord injury present in any of these cases. The paper was discussed by Dr. George H. Bunch and Dr. Coffee of the U. S. Veterans Hospital.

Dr. McIntosh read the resolutions on the death of Dr. Henry William Rice. The society gave a rising vote of approval to the committee's report and respect to Dr. Rice.

Dr. Bristow reported on a number of suitable meeting places that could be available. Of these places he named: The Columbia Hospital, the Baptist Hospital, The Rose Mary Tea Room, and the Township Auditorium. Dr. McIntosh moved that we accept the report and that the committee continue with its efforts, and decide on this matter at a later date. This motion was seconded and passed.

The application of Dr. C. M. Lide was read and turned over to the Board of Censors.

There were 52 members present and six visitors.

The Society adjourned at 10:15 P. M.

Respectfully submitted,

Benjamin Rubinowitz, secy.

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# The Journal of the South Carolina Medical Association

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# The Journal

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Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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## EDITORIAL

### STATE COMMITTEES BEGIN THEIR WORK

Foremost always from the standpoint of relative importance each year is the appointment of the standing committee on program for the next annual meeting of the State Association. For a number of years the custom has been to appoint the majority of the members of this committee from the place at which the Association will convene. We are most fortunate in the personnel for the coming year. Dr. Kenneth M. Lynch, Ex-President of the State Association, and Professor of Pathology at the Medical College, Charleston, is the Chairman. Dr. W. Atmar Smith, Secretary of the Charleston Medical Society, who has had a large experience in Society activities is another member and Dr. W. H. Prioleau, Associate Editor of the Journal in the Department of Surgery is a third member. The President of the State Association and the Secretary of the State Association are Ex-officio members. This committee has already entered upon its duties

and there is every assurance that the meeting next year in Charleston will be highly successful.

Perhaps next in importance to a program committee is that of the committee on medical economics. All over the world medical economics is attracting an extraordinary amount of consideration at the present time. Our committee is not only well known to South Carolinians but to the people of many other sections of the country. They have all given serious thought to the subject assigned them and their mature judgment means that the result of their investigations when transmitted to the House of Delegates will be received with the keenest interest. Dr. J. W. Jersey of Greenville is the Chairman of this committee while the others are Dr. James A. Hayne, State Health Officer, Dr. Robert Wilson, Dean of the Medical College and Dr. Douglass Jennings, Councilor of the Sixth District. Drs. Jersey, Hayne and Wilson are past Presidents of the State Association. Dr. Robert Wilson served for five

years on the now much discussed National Committee on the Costs of Medical Care. Dr. Wilson was one of the signers of the minority report which had the approval of the American Medical Association as well as our own State Association.

The personnel of the committee on legislation cannot be announced yet in its entirety but before the Legislature convenes this committee will be fully organized and ready to perform the usual duties required.

Under the head of special committees comes one with perhaps the most far reaching possibilities of any special committee appointed in years, namely: the committee to represent the State Association on the new Federal Relief plan for the indigent sick. This committee is as follows: Dr. S. E. Harmon of Columbia, Chairman of the Council who will act as Chairman of this committee, Dr. W. R. Wallace of Chester, a member of the State Board of Health and Dr. J. C. Buchanan, Jr of Winnsboro. The President and Secretary of the State Association are participating in the deliberations of this committee.

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#### COMMENTS ON ASSOCIATION ACTIVITIES

During the early fall months the constituent county and district societies swing into action all over the country and it is gratifying as one travels about South Carolina to note continued enthusiasm on the part of the profession for a high type of scientific program. There has been no appreciable falling off in attendance.

The Greenville County Medical Society at its September meeting had an attendance of about one hundred which included visitors from surrounding counties. A banquet preceded the meeting and the guest speaker was Dr. M. Hines Roberts, the eminent pediatrician from Atlanta.

The Fourth District Society met in September at Spartanburg and carried out a most interesting program which was followed by a delightful banquet. A guest of honor at this meeting was Dr. William Egleston of Hartsville, President-Elect of the South Carolina Medical Association and Chairman of the State Board of Health. Dr. Egleston outlined the

history, duties, and accomplishments of the State Health Department.

The Seventh District Society, taking in a good part of the Pee Dee country, held a most successful meeting at Kingstree in September. Among the guests invited to address this meeting were Dr. Robert Abell, President of the State Medical Association, who spoke on "The Future of the South Carolina Medical Association," and Dr. William Egleston, President Elect, who gave an outline of our State Board of Health activities. Several visitors from this and other states were also on the program. A very important feature of this meeting was the barbecue which was served in the classic manner in which the Pee Dee Section is justly famed.

Programs coming in to the office of the Journal indicate that the fall and winter meetings of such county societies as Charleston, Columbia, Anderson, Spartanburg, Pickens, Kershaw and Ridge with others too numerous to mention have been well thought out and promise inspiring attractions.

One of the latest district societies to put on a good program was that of the Third District which met at the Country Club half way between Laurens and Clinton early in October. The program lasted from the early evening until around midnight opening up with a banquet and musical selections. The President Elect, Dr. William Egleston, spoke of health matters in the state and received most hearty commendation for his lucid description of the distinguished record made by the State Board of Health of South Carolina which is now well known throughout the nation.

---

#### DEATH OF DR. H. R. BLACK

The South Carolina Medical Association has lost one of its most eminent members in the passing of Dr. Black. He had been for many years an Honorary Fellow of the Association, which means that he had been in good standing for thirty years or more and this is indeed a distinguished honor. At the meeting of the State Association held in Spartanburg in April the House of Delegates nominated Dr. Black for Affiliate Fellowship in the American Medical Association and he was duly elected by that

body at the meeting in Milwaukee in June. Few doctors anywhere manifested a keener interest in organized medicine than did Dr. H. R. Black of Spartanburg. He had held numerous offices in the County, District and State Association. His interests in and out of medicine were extensive. As a civic leader few equaled his enthusiasm and energy. As a physician and surgeon his accomplishments were known over the greater part of the South. He early began to make important contributions to the literature of medicine, some of his papers being of a pioneer calibre. His circle of friends extended over many states. His genial personality and his engaging smile were known of all men with whom he came in contact. He loved his profession and gloried in its achievements. His presence will be sorely missed at the annual meetings of the South Carolina Medical Association and the large number of other organizations to which he belonged and which he adorned.

---

#### LET'S MAKE THE COUNTY SOCIETIES 100 PER CENT

There has been some falling off of membership during the depression which was to be expected and the officers have been lenient in requesting members in arrears to pay up their dues but there are many reasons why delinquent members should send in their dues and eligible non-members be induced to come into the Association. One of the important reasons is that the new Federal Relief Fund is to be administered through the organized profession for the medical relief of the several hundred thousand now on the relief rolls in South Carolina. Every County Society will be required to appoint an advisory committee to assist the relief agencies in carrying out the provisions of bulletin number 7 just issued by the Government. While the money appropriated for the care of the indigent sick in their homes is an emergency measure it is incumbent upon every doctor whose name appears on the list of physicians in his respective county to enter into agreement with the Government to render the very best service within his power. It is a great opportunity for the medical profession to further demonstrate its unchallenged interest in the

proper care of the indigent sick of this country. Medical men have for all time considered it a privilege to minister to the sick in the name of charity but in recent years the demands for this free service have exceeded the capacity of the profession to respond without the financial assistance of some agency to help carry the responsibility. The Government will now step in and pay fees for this work somewhat commensurate with the outlay of time and energy usually devoted to the care of these people.

To carry out this program as requested by the Government it will be necessary for every county society to not only be organized properly but to function regularly. This is a good opportunity for every officer of the State Association and each officer of the County Society to stress the great value of organized medicine.

Our scientific programs for the most part are admirably conducted but economic medicine is now of extraordinary importance and every county medical society should have a discussion of some phase of the subject at almost every meeting for the next year or so. We feel sure that organized medicine will itself by this plan find a satisfactory solution to most of the economic problems now so urgent.

---

#### DR. LYNCH HONORED AS AN AUTHOR

We are always glad to learn of any worthwhile book from the pen of a South Carolinian and especially a South Carolina doctor. In the literary field books have been coming from the press in rapid succession as is well known but books by members of the medical profession of South Carolina on medical subjects are all too few. We are delighted therefore to excerpt an announcement in which one of the members of the South Carolina Medical Association is to figure prominently as the co-author or rather co-reviser of a world famous medical text book.

News and Courier, Oct. 8, 1933

Dr. Kenneth M. Lynch, Professor of Pathology at the Medical College of the State of South Carolina, will undertake a revision of the medical textbook, Green's Manual of Pathology, in collaboration with Dr. H. W. C. Vines, Director of the Charing Cross Hospital Institute of Pathology, London, at the invitation of the British publishers Bailliere, Tindall and Cox, London, through the

American publishers William Wood & Co., Baltimore.

The book is one long and widely used as a text in British and American medical schools and by practitioners as a reference work, and this will be the fifteenth edition. Originally written by Dr. Thomas Henry Green, late British pathologist, the last several editions, since Dr. Green became unable to take part in their preparation, have been revised by other English pathologists. The present edition will be the first undertaken by an American, the conclusion having been reached that participation in the revision by an American pathologist should not only improve the work but will tend to Americanize the book and make it more usable as a standard text in medical institutions of the United States.

The last edition, revised by Dr. A. Piney, Research Pathologist to the Cancer Hospital, London, was printed in 1928. It is a work of six

hundred and fifty pages, with numerous illustrations. Since that printing there has been considerable advance in knowledge of certain diseases, and, with the incorporation of new material and modification of the book to suit present conceptions, Dr. Lynch contemplates that, while the general features of the old standard text will be retained, it will be necessary to rewrite considerable sections and to rearrange and alter others.

The plan to have an American and an Englishman join in the revision of such a book is decidedly novel, and it is looked upon as a mark of signal recognition of the quality of work being done in the Medical College of the State of South Carolina that Dr. Lynch has been selected as the American reviser. He is also the author of another medical text, "Protozoan Parasitism of the Alimentary Tract," published in 1930 by The MacMillan Co., New York, and a large number of reports of his research work have been published in various scientific magazines.

## ORIGINAL ARTICLES

### \*A PRACTICAL TREATMENT OF DIABETES MELLITUS

By F. Eugene Zemp, M.D., Columbia, S. C.

There are a million and a half diabetics or potential diabetics in the United States today and the vast majority of them fall into the hands of the General Practitioner for care. Even those that are treated in hospitals by Specialists the majority of them later on fall into the hands of the General Practitioner. It is very important then that the General Practitioner have a method or understand the method instituted in the hospital in order to guide the patient safely on. Diabetes is one disease that we all are apt to avoid treating if we can. The more you study it the more complicated it becomes and it seems that all the authorities in the Country differ to some extent as to the type of diet which is the most effectual. Quackery too, has played no little part for you often see advertised in the paper of some patent medicine that is a "sure cure." This has impregnated the minds of many patients and has only led to confusion in trying to get the cooperation of the patient to follow the proper treatment. Frequently a patient will tell you that he has diabetes and that he was told to cut out eating sugar, bread, cake, butter, or some other food. Some have been given diets but after investigating the diet they are using there is no scientific basis for it. Some foods have been cut out but other foods having the same caloric value are given. The other day I had dinner with a fellow physician in a nearby town who has diabetes. I was simply amazed at the quantity of food that he ate consisting of bread, potatoes, pork, butter, pies and what-not. However, he had a small bottle of saccharin tablets which he used in his coffee and honestly felt that as long as he did this he could eat anything he wanted to. The question of diet is a hard problem for the average physician. He may tell the patient to cut out certain foods but if he is asked for a diet list he is unable to write out one.

Today my attempt will be to give to the General Practitioner a practical method of handling the average case. Since the discovery of Insulin there is no reason why they should not treat the mild and moderate cases but a severe case or one in acidosis or coma should however be sent at once to a specialist who has every facility at hand for drastic treatment.

When a diabetic enters your office certain mental observations should be recorded at once; such as, he is an old person or rather obese, therefore very likely to be a mild case or, he is a middle age man or of average weight, more likely a moderate case or he is very thin or a child, more likely a severe case. Then after taking a careful history with especial attention to familial tendency, duration of the disease and his present symptoms, a thorough physical examination should be made to determine his present condition, to eliminate any foci of infection and to determine if any complications are present. The next question to be decided is whether he is a mild, moderate or severe case. This can be accomplished by taking into consideration his age, height, weight, general condition, the amount of sugar and acetone in the urine and the blood. This determined proper treatment is then instituted. Diet with or without Insulin according to the severity of the case is the only treatment. Other Adjuncts may be used in certain cases if desired such as Myrtillin, Synthaline, etc.

Before mentioning the type of diet I prefer I would like to say a few words about the different types of diets used. Newburgh and Marsh prefer a rather high fat diet. Joslin now gives a high Carbohydrate diet consisting of 200 to 250 grams a day if tolerance will permit. John and Allen are to neither extreme and use a diet with such a proportion of protein, fats and carbohydrates so as to keep the Fatty-Acid-Glucose ratio in a proportion of about a 1-1½ to 1. The latter type of diet is the one that I use except under certain conditions. It is seldom necessary to go through the complicated ordeal of figuring out the maintenance diet of each

case according to calories per pound body weight from some scale or chart that has been devised. Instead, tests diets are used from which the patient's tolerance is determined. It is to be remembered that weighed diets are far superior to estimated diets but when the former is not practical then carefully estimated diets will serve almost as well in the mild and moderate cases.

*Treatment:*

The general principal in treatment is that the patient is placed on a low calorie diet (800-1000 calories a day) and his tolerance determined by increasing this diet gradually, adding Insulin if necessary until a final Insulin-Diet-Weight balance is reached. Better results are obtained when the weight is kept about 10 pounds under the normal weight. The following method illustrates this:

*Mild cases:*

These patients are rather obese, or older persons and a mere restriction in the total calories to about 800-1000 will usually suffice. The protein, fats and carbohydrates are in such a proportion so as to maintain about a 1-1 1-2 to 1 Fatty-Acid-Glucose Ratio. Such a diet is as follows:

DIET NO. 1  
Breakfast

Orange or grapefruit 1-2.

Oatmeal, hominy, puffed rice or wheat—Choice of one—2 tablespoonful (level) or Toast—one thin slice.

Coffee—cream 1 teaspoonful or butter 1-4 cube.  
1 Egg.

Saccharin may be used for sweetening

Lunch

Chicken, fish, lamb, steak, veal or beef (lean portion). Choice of one—2 inches square in size.

Spinach, turnips, cauliflower, string beans, okra, squash, cabbage, carrots, mustard. Choice of one 4 heaping tablespoonfuls, or, choice of two 2 heaping tablespoonfuls.

Lettuce 2 leaves with vinegar.

Bread 1-2 slice—butter 1-4 cube.

Not any dessert—water.

Supper

Meats—choice of one above 2 inches square.

Bread—1-2 slice.

Vegetables—Choice of one above, 2 tablespoonfuls or tomato 1-2.

Lettuce 2 leaves.

Cream 1 teaspoonful or butter 1-4 cube.

Tea with lemon.

DIET NO. 2

Breakfast

Orange 1-2, eggs 2, Toast 1-2 slice, Oatmeal 2 tabs., butter 1-2 square.

or

Grapefruit 1-2, eggs 2, toast 2 thin slices, cream 2 tabs.

or

Grapefruit 1-2, eggs 2, cornflakes 1-2 cup, cream 2 tabs.

Dinner

Steak 3 inches square.

Pork chops, 1 medium.

Lamb chops, 1 medium.

(Choice of one Meat)

Spinach, brussel sprouts, cauliflower, cabbage, turnip tops, mustard greens, string beans, stewed tomatoes, rhubarb, saukraut. Choice of one—4 heaping tablespoonful, or, choice of two—2 heaping tablespoonful.

Lettuce, 1-4 head; bread, 1-2 slice; grapefruit, 1-2; cream, 2 tabs.; butter, 1-2 square.

or

Lettuce, 1-4 head; strawberries, 2 tabs.; bread, 1-2 slice; cream, 2 tabs.; butter, 1-2 square.

or

Lettuce, 1-4 head, orange, 1-2; bread, 1-2 slice; cream, 2 tabs.; butter, 1-2 square.

Supper

Roast veal, 3 inches square.

Roast lamb, 3 inches square.

Chicken, average serving.

(Choice of one Meat)

Spinach, brussel sprouts, cauliflower, cabbage, turnip tops, mustard greens, string beans, stewed tomatoes, rhubarb, saukraut. Choice of one—3 tablespoonful, or, tomato, 1 small.

Lettuce, 1-4 head; baked apple, 1 small; bread, 1-2 slice; cream, 2 tabs.; butter, 1-2 square.

or

Lettuce, 1-4 head; pear, 1-2; bread, 1-2 slice; cream, 2 tabs.; butter, 1-2 square.

or

Lettuce, 1-4 head; pineapple, 2 slices; bread, 1-2 slice; cream, 2 tabs.; butter, 1-2 square.

Coffee with saccharin or tea with lemon may be used.

DIET NO. 3

Breakfast

Grapefruit, 1-2; oatmeal, 2 tabs.; eggs, 2; toast, 1 thin slice; cream, 4 tabs.; butter, 1 square.

or

Strawberries, 1 small dish; cornflakes, 2 tabs.; eggs, 2; toast, 1 thin slice; cream, 4 tabs.; butter, 1 square.

or

Orange, 1-2; hominy, 2 tabs.; eggs, 2; toast, 1 thin slice, cream, 4 tabs.; butter, 1 square.

**Dinner**

Chicken, 1 average serving; rice, 2 tbsp.  
 Roast beef, 3 inches square; rice, 2 tbsp.  
 Steak, 3 inches square, rice, 2 tbsp.  
 (Choice of one Meat)

Spinach, brussel sprouts, cauliflower, cabbage, turnip tops, mustard greens, string beans, rhubarb, stewed tomatoes, saurkraut. Choice of one—2 tablespoonful.

Lettuce, 1-4 head; peach or pear, 1-2; bread, 1-2 slice, cream, 2 tabs.; butter, 1 block.

or

Lettuce, 1-4 head; peach or pear, 1-2; bread, 1-2 slice, cream, 2 tabs.; butter, 1 block.

or

Lettuce, 1-4 head, baked apple, 1 small; bread, 1-2 slice; cream, 2 tabs.; butter, 1 block.

**Supper**

Steak, 3 inches square.

Pork chop, medium,

Ham, 1 (lean) slice.

(Choice of one Meat)

Spinach, brussel sprouts, cauliflower, cabbage, turnip tops, mustard greens, string beans, rhubarb, stewed tomatoes, saurkraut. Choice of one—4 tablespoonful, or, tomato, 1 small.

Lettuce, 1-4 head; pineapple, 3 slices; bread, 1-2 slice; cream, 2 tabs.; butter, 1 block.

or

Lettuce, 1-4 head; apple sauce, 3 tabs.; bread, 1-2 slice; cream, 2 tabs.; butter, 1 block.

or

Lettuce, 1-4 head; pineapple, 3 slices; bread, 1-2 slice; cream, 2 tabs.; butter, 1 block.

Coffee with saccharin or tea with lemon may be used.

The above diet is very simple to write and easy for the patient to carry out. As soon as the patient becomes sugar-free, usually in 3 or 4 days time, he is placed on the next higher diet or Diet No. 2 (12000-14000 Calories). If he becomes sugar-free on this diet and his weight remains stationary or is increasing there is no need to increase the diet higher. However, if he continues to lose weight then it is increased to (1600-1800 Calories) or Diet No. 3. Usually this is sufficient to bring about a Diet-Weight balance and it is seldom necessary to increase the total calories any higher.

*Moderate cases:*

If a patient doesn't become sugar-free or if he has already been determined as a moderate case then Insulin is given. At first only 10 to 15 units are given 15 minutes before breakfast once a day. Diet No. 1 is still adhered to and

as soon as he becomes sugar-free he is placed on the next higher diet or Diet No. 2 and if he remains sugar-free on this diet then it may be increased to Diet No. 3, if necessary, and Insulin adjusted until an Insulin-Diet-Weight balance is reached. Should he not become sugar-free on Diet No. 1 with Insulin once a day, then 5 to 10 units are given 15 minutes before supper and as soon as he is sugar-free on this diet then it is increased to Diet No. 2. It may be further increased to Diet No. 3, and the Insulin increased or decreased gradually until a Diet-In-Sulin-Weight balance is reached.

*Severe cases:*

If a patient does not clear up on the above program or has already been determined as a severe case more drastic treatment is necessary. The diet should be weighed and Insulin immediately instituted. The initial diet is around 800 calories or a maintenance diet may be determined if desired, and Insulin is given 15 minutes before each meal, and sometimes at midnight, in sufficient quantity to bring the patient quickly under control. Anywhere from 30 to 120 units are given within 24 hours. The average dose is 15 units before each meal with possibly a small dose at midnight. However, there is no set rule and enough Insulin should be given to bring about results. Some authorities estimate the amount of Insulin needed according to the height of the blood sugar or so much Insulin for so many grams of sugar in the urine. As soon as the blood sugar approaches normal the diet should be increased immediately to ward off a reaction. It is then increased gradually as in the moderate cases and the Insulin increased or decreased gradually if necessary until a final Insulin-Diet balance is reached.

*Acidosis:*

In this condition the treatment is the same as in the severe cases only the carbohydrate content of the diet is increased to 120 to 150 grams a day, the total calories remaining the same as in Diet No. 1, and enough Insulin given four or five times a day to produce results. A midnight dose buffered with orange juice is of considerable value. As soon as the acidosis clears up the diet is then readjusted to a 1-1 1-2 to 1 Fatty-Acid-Glucose ratio and carried on as mentioned above in severe cases.

*Coma:*

In this condition the patient is unconscious, dehydrated and in a state of collapse, therefore measures are taken to correct these conditions. The patient should receive treatment on the way to the hospital by giving Insulin and fluids if possible. During the first hour of treatment the following measures should be carried out: 1. Place the patient in a warm bed surrounded by hot water bottles, blood and urine examined for sugar and acetone and the carbon dioxide combining power determined. 2. 100 units of Insulin given within the first half hour. This may be divided into two doses and each dose given partly intravenously and partly subcutaneously. A third dose should be given by the end of the first hour. 3. Gastric lavage. 4. 500 c. c. of normal saline intravenously. Joslin seldom gives glucose but most authorities buffer the Insulin by giving 10 to 20 grams of glucose intravenously in anywhere from a 10 to 50 per cent solution. 5. Hypodermoclysis of 1000 c. c. of normal saline. 6. Heart stimulants such as: Caffein-Sodium-Benzoate 7 1-2 grains, Coramine 1 c. c., Ephedrine 1 c. c. intravenously, Strophanthin 1/120 grain or Digifoline 1 to 2 c. c., should be given and repeated when necessary. Subsequent treatment depends on the progress of the patient as determined by the various laboratory tests. The effort should be to over come the acidosis and not pay so much attention to the blood sugar at the present time. Insulin is continued 20 to 50 units every half hour subcutaneously until 100 to 300 units are given and then cut down in amount and time lengthened as the blood sugar approaches normal to prevent a reaction. This is determined by testing the blood and urine from every one to three hours. The total amount of Insulin varies in different cases. 250 units is the average amount in the first 24 hours, but in extreme cases anywhere from 500 to 1000 units have been given. Fluids in small amount, 100 c. c., should be given by mouth during the first 24 hours and should consist of hot broths, ginger ale, coffee, orange juice, etc., totaling about 100 grams of carbohydrates. Alkalies as soda bicarbonate are of very little help but may be given. On the second day the treatment should be continued as mentioned above in acidosis.

*Adjuncts to Insulin Diet Treatment:*

Insulin or Levulose: This carbohydrate obtained from Jerusalem artichokes gives better results when used intermittently. It is usually possible to substitute 15 gms of carbohydrates as contained in the form of artichokes for 5 gms of carbohydrates as contained in 5 per cent vegetables.

*Myrtillin:*

This vitaminine substance obtained from the blue-berry leaf and popularized by Allen offers a bright future. It is safe to give and in overdosage no harmful effects have been noticed. With the aid of this drug the Insulin may be reduced from 10 to 20 units. Patients taking only 10 to 20 units a day often are able to stop Insulin entirely. One prerequisite in giving the drug is that the patient must have a perfect Insulin-Diet balance before starting it. The dose is 0.3 gm. three times a day 1 hour before meals. Larger doses do not produce any greater results.

*Synthaline:*

This drug is used in a similar manner to myrtillin but is not near so safe. Insulin has been reduced by 30-45 units in some cases. Others taking as much as 30 units of Insulin a day have been able to replace it with 25 mg. Synthaline. It is usually given in 10 mg. doses three times a day with 7 1-2 grains of decholin to prevent toxic symptoms.

*Insulin Reaction or Shock:*

If the symptoms begin to appear near the meal time by simply shoving up the meal or giving a part of it immediately a reaction may be prevented. If it is at some other time by giving a lump or two of sugar, 5 to 10 gms of glucose or juice of an orange may prevent it. One of these methods must always be tried as long as the patient is able to swallow. If the patient is unconscious then 1 c. c. of Adrenalin Chloride subcutaneously usually arouses him enough to be able to give something by mouth. In severe cases 10 gms of glucose intravenously will usually suffice.

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## DISCUSSION

*Dr. Izard Josey, Columbia:*

This is a rather wide subject that Dr. Zemp has attacked, and I want to congratulate him on the admirable fashion in which he has covered it. I shall confine myself, in discussion, to bringing out

a few points in regard to diabetics who are mild or moderate cases, in middle age or above. The mild cases at times offer difficulty in diagnosis. An important point in the diagnosis of these diabetics is to collect urine specimens two hours after a rather high carbohydrate meal. On finding sugar in the urine, a blood sugar should be taken; and after a case has been proven to be a diabetic, don't do a tolerance test. The addition of a hundred or even of a few grams of sugar to a diabetic is an insult to his pancreas that should not be attempted.

As to the question of diets, the Woodyatt diet, worked out according to height and weight ratios and figured out to the point of optimum weight, offers, I think, too small a dose of carbohydrate. The tendency today is to follow Joslin's teachings and give a higher carbohydrate diet. This offers a lower ratio of fatty acid to carbohydrate and thus prevents the patient from burning his own fat and putting him into acidosis. That I think, is important—to give sufficient carbohydrate in the diet to prevent any tendency to acidosis. Diets as high as 2,000 calories and more, to be fed to a man who is working, should contain up to as high as 200 grams of carbohydrate. It is remarkable, however, how these moderate diabetics can get along on relatively low calorie diets. It is not unusual to find a diabetic who can work at a moderate occupation, (such as working in a store or office) on 2000 calories or less. These people are obese, most of them; and although the basal metabolism rates have not been proven to be particularly low I think they must have a rather conservative type of machine in that they can work and live on a diet much lower in calories than you or I.

Most diabetics, when treated properly, have a tendency to improve. The usual story is a moderate diabetic coming in with a rather high blood sugar and spilling sugar in his urine all the time. He is put on a moderate diet, with insulin three times a day. At the end of several weeks that insulin can be cut down to half, and at the end of another month or two the patient can often go without insulin. The amount of insulin, of course, and when it can be cut down, depend upon each individual patient. The eradication of any pyogenic focus that may be present should be stressed.

The education of a diabetic patient to a thorough knowledge of the disease and its management is of considerable interest, and the patient should receive all possible encouragement along such lines. At the end of a few months the moderately severe diabetic of average intelligence should be in a position to care for himself with only very infrequent consultations with his physician.

Dr. Hugh Smith, Greenville<sup>4</sup>

I have enjoyed Dr. Zemp's paper, and I just want to say one or two words about his outline of treatment, especially about coma.

A patient in diabetic coma when first seen is a very sick patient, as Dr. Zemp said, and demands urgent and persistent treatment. We have to stand by—someone has to stay with that patient for several hours. Insulin has to be given. It might be given, I think, preferably over a little longer period of time than Dr. Zemp suggests. I have found that doses of forty or fifty units of insulin, given at one to two-hour intervals, will usually suffice. As the doctor said, normal salt solution intravenously and by hypodermoclysis is valuable. A simple thing by which to watch the progress of the diabetic is a simple urinalysis. Use ferric chlorid, and watch the urine every hour or two. If you will stay on the job and do it yourself, you can handle it in the home. I do not mean, of course, that you should not put them in a hospital, because I think they are better off there; but if you have the insulin and will yourself stay at the bedside for a few hours you can control them.

#### \*THE MANAGEMENT OF ROADSIDE INJURIES

By Dr. James McLeod, Florence, S. C.

The large number of automobiles that travel over our highways at such great speed results in many accidents—in many fatalities. To attempt to cover fully the management of injuries occurring at roadside in the time allotted for this paper is, of course, impossible. It will then, be my endeavor to cover in brief outline the management of the more frequent and important injuries.

Of course, it is well known to all of you that any person struck by an automobile, or the victim of a wreck or collision may have any type of injury. In this paper I will group together the management at the site of accident, and the treatment after the patient has been removed.

External hemorrhage, of course, should be controlled immediately by the application of clamps, compression bandage, or tourniquet. After this is done the patient should be briefly but carefully inspected to see where it is probable that the major injury lies.

If this injury is found to be a fracture of one of the long bones it should be splinted where the

<sup>4</sup>Read before the South Carolina Medical Association, Spartanburg, S. C., Wednesday, April 19, 1933.

patient is lying, before removal is attempted. A Thomas splint is the method of choice, because with this traction can be obtained by applying a hitch around the ankle or wrist. The clothing is not removed, but cut where necessary. Morphine should be administered as routine. The treatment of the fracture is begun immediately, and reduction should be attempted as soon as practical. There is no such thing as waiting until the swelling goes down. It is best to reduce the fracture before the swelling has time to appear, and if you do not see the case until later the best way to combat the swelling is to reduce the fracture. The repair of a fracture is begun by nature immediately after it takes place. In all fractures there is bleeding from the ends of the broken bones, and usually from the soft tissues also. The blood clots and soon begins to organize. Capillaries soon begin to meet one another, and later there is connective tissue, callus and bone. If reduction is not made until after the blood is clotted our reduction retards nature. Delayed union and non-union are often brought about by late reduction and improper immobilization. Muscles go into spasm shortly after every fracture, and usually an anesthetic should be employed in the reduction, not only to allay pain, but to cause less injury to the soft tissues. All cases should be x-rayed as soon as possible, but many excellent results were obtained before the days of x-ray. It is then, all important to restore the contour of the bone as quickly as can be done. When a fracture case is admitted to the hospital it should be regarded as an emergency, regardless of the hour of night. If it is found necessary to adjust the initial splinting after an x-ray is taken, it should be done immediately.

In fractures of the shaft of the femur in adults, where there is malposition, I have used skeletal traction as routine for many years—applied just as soon after accident as can be done. In children I still rely on skin traction, using double adhesive from just below the site of fracture. If the fracture is in an adult, and is to be treated at home, and skeletal traction is not to be used, use double adhesive, and put on all the weight possible! I do not believe you can put too much weight on adhesive traction in an adult. From thirty to fifty pounds ap-

plied early will often save a later open operation. The chief things in fracture treatment consist of (1) The proper emergency splinting (2) The reduction as soon after injury as possible, (3) If traction is to be used, remember most errors are made on side of too little traction.

If the fracture is in the upper two-thirds of the femur and skeletal traction is to be used, I insert calipers, or Kirschner wire just above the condyles. If the fracture is supra-condylar I insert a Steinmann pin just below the tuberosity of the tibia. If both bones of leg are broken and there is malposition, I use a Steinmann pin through the calcaneus. If the fracture is of the Pott's type, reduction is accomplished under an anaesthetic, and removable plaster applied in form of so called "sugar tongs." A fracture of this type is treated by removing the splints daily, soaking the part in hot water, and allowing the patient to begin flexion and extension—to the point of pain! In my opinion motion to the point of pain which is activated solely by the patient is perfectly safe, and is begun at the end of forty-eight hours. Fractures of the lower end of the radius and ulna are treated by immediate reduction under an anaesthetic, and an anterior and posterior removable splint applied, using either thin wood or moulded plaster. These fractures are treated with motion throughout—beginning with active motion to the point of pain at the end of forty-eight hours. Passive motion is begun in ten days. Fractures of both bones of the forearm, if not reduced with traction in one week, are subjected to open operation. Fractures about the elbow are reduced immediately and put in a Jones position. In this fracture much care must be exercised in watching the circulation—the radial pulse being observed hourly. If the pulse is not detected the amount of flexion must be lessened. Fractures of the shaft of the humerus are treated with an immobilizing splint if position is good. If there is malposition traction is used. If this is not soon successful operation is performed. When such a fracture is seen, first observe if the patient can extend the wrist, as the musculospiral nerve may be caught in the fracture. There is also apt to be damage to the brachial artery. I had such a case two weeks ago, the brachial artery being

caught in a fragment and completely shut off. It was an ideal case for resection of the brachial at the site of damage. The circulation had been cut off four hours, however, and there was terrific trauma to the arm and forearm, and also, the fracture was badly compounded. I cut into the vessel and liberated the clot, and then sutured the vessel, but it was not successful—for the factors named above. Injuries to the spine should be x-rayed as soon as possible, the important view being a good lateral x-ray. If paralysis is present and the lateral x-ray shows encroachment on the neural-canal these cases should have immediate laminectomy. In the transportation of any spine injury care must be observed to have the patient moved flat of his back. Crushing injuries of the chest are very serious, and these cases should be given a guarded prognosis. Most of these cases are treated symptomatically, but a large hemothorax may require aspiration; and we should be on the watch for a massive collapse of the lung.

If the fracture found is compounded it presents an even more serious emergency problem. Compound fractures that are produced from without in by the sterile end of the bone do not, as a rule, present the serious factors as when the fracture is produced from without in—as in the former case the wound may have been protected from gross contamination by clothing, whereas in the latter it may be caused by the wheel of a vehicle which has been on the ground. It is seldom necessary to apply a tourniquet to these cases. The ischemia that is so produced may further lower the resistance. The emergency dressing should consist of sterile gauze, and a splint, preferably of the Thomas type—so as to immobilize the fracture, and also to cause less damage to the soft tissues. The protruding end of the bone should not be reduced at roadside, if it is possible to get the case to your office or hospital in a reasonable length of time.

It is probably impossible to properly sterilize it at the site of accident, and if reduction is accomplished it is probable that infection is carried deeply into the wound. All cases when admitted to the hospital should be operated on immediately. Before the anaesthetic is started the distal portion of the limb should be carefully examined for nerve injuries. The sur-

rounding skin should first be shaved and thoroughly scrubbed with green soap and a nail brush. The wound itself is next debrided. If it is very dirty I use at least ten gallons of hot normal salt, or 1-8000 Bichloride, and pour this over the wound to thoroughly cleanse it. All damaged soft tissues and small fragments of bone are then removed and the wound painted with full strength tincture of Iodine. After the wound is further opened and I wish to use a bactericidal agent, I use ether. I use ether extensively in wounds and like it very much. After the wound is thoroughly cleansed the fracture is reduced. Of course, each case is an individual problem, and the manner of reduction varies from simple reduction with immobilization, to skeletal traction, or in some cases the using of a bone plate, which I regret ever to have to employ. If skeletal traction is to be applied it is applied immediately in the operating room. No wound is closed without drainage, and in cases of long standing I use Carrell tubes, and flush the wound with Dakin's. Tetanus antitoxin is given routinely in all cases.

One of the most frequent injuries that occurs at roadside is severe head injuries, but because the paper that preceded this one dealt with that subject alone, I will only mention it briefly. Shock is the factor that should be first combatted, and nothing should be done to any head injury until the patient has fully recovered from this. Treatment for this condition is instituted immediately. External heat, atropine, styrchnine and pituitrin are stimulants of choice. Violent stimulants as adrenalin and caffeine are not employed unless the patient is in extremis. Morphine should not be used unless absolutely necessary. If the patient is violent and uncontrollable I use avertin by rectum. Intravenous glucose is given, using 50 cc. of 50 per cent solution, and repeated in four hours if indicated. Large doses of normal salt are not given because it hastens the oncoming cerebral edema. The condition of shock is one that must be dealt with first, not only in head injuries, but no major procedure for any type injury should be undertaken until all efforts to overcome this condition have been utilized.

We only operate on three types of head injury: (1) Decompressed fractures (2) Compound fractures (3) Extradural hemorrhage,

which is due to a rupture of the middle meningeal artery. This latter type of case is very rare, yet it is one that may yield dramatically to surgery. We have only had six cases of this type in The McLeod Infirmary in the past nine years.

Our treatment, in other head injuries, consists of lumbar punctures and dehydration. The puncture is performed as soon as the patient recovers from shock. If the fluid is bloody all possible is withdrawn, because it has been proven that red blood cells stop up the normal pathways and filters for elimination of cerebro spinal fluid, producing obstruction of the cerebro-spinal fluid circulation, chiefly the subarachnoid spaces and Pacchionian bodies. Lumbar punctures are repeated every six hours as long as blood is present, and all fluid withdrawn at each puncture. Fluid is limited to 30 ozs. in twenty-four hours. Dehydration is further accomplished by Magnesium Sulphate by mouth and rectum, after the period of shock has been overcome. Hypertonic glucose also aids in this. X-ray is not done until the patient is well on the road to recovery. The fracture is not the important factor, but it is the damage to the brain. All patients should be x-rayed before discharge for the information so furnished, and for medico legal value.

The next subject that I would like to stress is serious non-penetrating wounds of the abdomen. The organs of the abdomen liable to injury are the solid ones, as the liver, spleen, pancreas and diaphragm, and the hollow ones, as the stomach, large and small intestine, bladder and blood vessels. I have operated on cases of non penetrating abdominal injuries sustained at the roadside in all of the above except the stomach and diaphragm. I have had only one case of rupture of the large intestine and only two cases of non penetrating rupture of the small intestine. Of the latter cases, one was sustained in an automobile wreck, and one was struck by a baseball bat. The former case occurred in 1931 in a young man of twenty-one years of age, who was clothed at the time of accident in a very heavy top coat. He ran his car into a ditch at a high rate of speed, and the steering wheel struck him violently in the abdomen. This

was the only injury he sustained. I saw him in consultation five hours after the accident. He was complaining of generalized abdominal pain. His temperature, pulse, respiration and blood pressure were normal. Blood count was 15,000 total white blood cells with 83 per cent polys. Physical examination was negative with the exception of his abdomen, which revealed moderate generalized tenderness and rigidity throughout. He was operated on soon after admission to the hospital and a complete rupture of the jejunum found about four feet from the stomach.

The latter case I referred to showed about the same physical signs, and he likewise had a jejunum torn almost in two. Both cases made good recoveries. I have had four cases of rupture of the spleen in the past two years, one of the cases having a rupture of the pancreas also. This case was a boy six years of age who was run over by an automobile. I saw him shortly after the accident, and could find nothing positive on physical examination except his abdomen, which was soft, but moderately tender throughout. He was observed for six hours and at the end of that time he still complained of abdominal pain and he had a moderate generalized muscular rigidity. His blood count was 18,000 white blood cells with 85 per cent polys. His spleen was removed and his pancreas sutured. He made a good recovery.

In the past thirty days I have had two cases of ruptured spleen. I did a splenectomy on each of them. Both cases are doing nicely. Before operating on any serious non penetrating abdominal injury I always secure a donor for Blood Transfusion; and in most instances a transfusion is given immediately after operation.

It is my opinion that cases with a history of severe abdominal injury, who complain of considerable pain for as long as six hours after injury, should be operated upon. The great tragedy in these cases comes from delay of operation. Pulse, blood pressure and temperature are of little value. Blood counts are highly valuable. Careful observation of the abdomen and operation as soon as possible will avert many disasters.

## DISCUSSION

Dr. J. W. White, Greenville:

I have thoroughly enjoyed this symposium and can not refrain from commending particularly Dr. McLeod. He has mentioned the need of speed. He also mentioned the use of skeletal traction, which I think is one of the most important developments in the last ten years. These help in the avoidance of subsequent surgery. If you can get after your patient right off, do the reduction and get on traction sufficient, we shall avoid many of the bad results later.

\*APPENDICITIS—IS THE MORTALITY INCREASING?

By *J. Sumter Rhame, M.D., F.A.C.S.*,  
Charleston, S. C.

In bringing this subject before you, it is with the desire to further stimulate a more serious consideration of one of the most prevalent abdominal conditions that confronts the patient, family, physician and surgeon.

It has been stated that approximately 20,000 persons in the United States die of Appendicitis and its complications annually, therefore, I trust that you will agree with me that any effort made to bring this condition to the attention of the public as a whole is justifiable.

The surgeon is primarily held responsible for deaths occurring from Appendicitis, yet we are fully aware that in the vast majority of cases, it is not his inability to properly handle such cases but the delay of the patient in seeking an early medical or surgical attention.

We are all confronted with cases that have existed for several days, or longer, before proper advice is sought. The patient in so many instances, feeling that he is suffering with some gastro-intestinal upset and resorting to the advice of family, friends, druggist or others, takes laxatives, or cathartics, and expects to be relieved, yet, too often most valuable time has been lost. Delay spells *FATALITY!*

Again, we are often called upon to operate on patients who have been unfortunate in being observed by their physician too long before advising surgical intervention, hence the necessity for the plea that any case of abdominal pain should receive very careful consideration and thorough study, to rule out Acute Ap-

pendicitis. Any abdominal pain persisting for more than six (6) hours generally means an acute abdominal condition—and if one has the initial symptom pain, which is present in about 95 per cent of cases, followed by localization in the right lower quadrant, regardless of nausea or vomiting, it is the safest plan to advise surgery without delay, for when the diagnosis is made it is time to operate as soon as the patient can be properly prepared.

By following this plan I am firmly convinced that the mortality rate can be greatly reduced and brought down to less than 1 per cent.

There is one type of Appendicitis that probably gives more difficulty in arriving at a correct diagnosis than any other; namely: the low lying, or pelvic appendix, not in close contact with the parietal peritoneum. Quite often here we find the patient presenting symptoms referable to the bladder. Fever is not often above 99 degrees or 100 degrees. It may be 102 degrees or more, or normal in pelvic abscess. Again, we find at times a short interval where the temperature is normal or subnormal in the early stage of rupture, gangrene, or the beginning of a generalized peritonitis.

Appendices—in the pelvis, tho rare, are apt to be fatal because not diagnosed early.

The advantage of a digital rectal examination plus a thorough knowledge of the atypical symptoms and course of the cases will lead to an earlier diagnosis with the saving of many more lives.

Leucocytosis and a "shift to the right" in the differential count is a help when present, yet, we find at times a normal blood count in rupture, pelvic abscess and generalized peritonitis.

Of the 11,356 patients operated upon in Philadelphia from 1928 to 1932, reported by Dr. John O. Bower, the average time between onset of symptoms of those who lived was 54.31 hours, of those who died 84.39 hours.

The following table shows the mortality with a steady rise, time the chief factor:

*Table I.*

Admitted within:	Deaths.
24 hours	2.22%
48 hours	5.00%
72 hours	7.14%
72 hours or over	11.11%

*Table II.*

Of 6,235 patients who entered the Hospitals of Philadelphia in 1930 and 1931 for Appendicitis, 2911 furnished reports as to laxatives.

Of 2119 receiving a laxative, 171 died, a mortality of 12.46 per cent. 792 received no laxative and 7 died, a mortality of 0.89 per cent.

*Table III.*

Capt. G. F. Cottle, Medical Corps U. S. N., reports the following from three Naval Units (the Naval Hospital, Brooklyn, N. Y., the Hospital Ship U. S. S. Relief, and the Naval Hospital, Washington, D. C.).

1923—1931; (8 year-period).			
Chronic Appendicitis,			
Operations 439	Deaths 1	Mortality 0.2%	
Acute Appendicitis,			
Operations 361	Deaths 7	Mortality 1.9%	
TOTAL. 800	8	1.0%	

For the entire NAVY, 10 year-period

1920—1929			
Chronic Appendicitis,			
Operations 4329	Deaths 9	Mortality 0.2%	
Acute Appendicitis,			
Operations 7875	Deaths 116	Mortality 1.4%	
TOTAL. 12,204	125	1.0%	

*Table IV.*

From J. M. T. Finney, Jr.'s. review of 3913 cases of Appendicitis operated upon during 1900 to 1930 in the Union Protestant Infirmary and its successor, the Union Memorial Hospital, Baltimore, the following table shows the per cent of deaths in five year periods.

Yrs.	Fem. %	Male %
1900-05	1.26	9.47
06-10	0.93	5.96
11-15	0.76	2.23
16-20	2.10	1.18
21-25	1.34	2.56
26-30	1.16	2.51
TOTAL	1.26	3.32
GRAND TOTAL, 91 deaths F.&M. %	2.325	

*Table V.*

From Roper Hospital series:

1929—1932 inclusive, we find the following:

Yr.	CASES	DEATHS	%
1929	264	2	0.75
1930	244	5	2.05
1931	163	5	3.06
1932	248	3	1.20
TOTAL	919	15	1.63%

*Table VI.*

The Duke Endowment reports of the Hospital section 1930 and 1931 give the following number cases, etc. for Hospitals represented in North and South Carolina.

Yr.	Hospitals	Cases	Deaths	%
1930	80	7814	194	2.48
1931	89	9109	180	1.98
TOTAL	-----	16,923	374	2.21%

*Year 1930.*

Patients	Hospitals	Mortality
2401	18 white	1.62%
5010	47 whites & negro	2.57%
403	15 negro	6.45%

*Year 1931.*

Patients	Hospitals	Mortality
2632	19 white	1.25%
6096	55 white & negro	2.07%
381	15 negro	5.51%

*Table VII.*

The statistics of the Third Surgical Division of Bellevue furnishes the following:  
1921-30, inclusive, 10 years.

	Cases	Deaths	%
Acute	774	59	7.6
Chronic &			
Sub-acute	444	4	0.9
TOTAL	1218	63	5.1%

Table VIII.

From a comparative point the following table is arranged:

Series	Cases	Deaths	%
Union M. -----	3913	91	2.32
Duke Endowment	16923	374	2.21
Roper -----	919	15	1.63
Navy -----	12204	125	1.00
Bellevue -----	1218	63	5.16
TOTAL -----	35177	668	1.89%

There are several important factors that no doubt tend to increase the mortality of Appendicitis, as *delay* or *elapsed time* after onset of the disease before operation is performed.

In table I we note the increasing mortality rate.

In Table II is shown the increase in mortality in cases that have received a laxative; although I do not believe that all cases of ruptured appendices can be attributed to their use, yet there is sufficient proof that their use in any case of acute abdominal pain is often *fraught with danger* and especially to be avoided.

Table III shows that in a service like the Navy, which is easily controlled, the death rate is very low.

Table IV, for 30 years, in 5 year periods, shows marked decrease in mortality in Males, about stationary in Females, with a slight decrease in the combined rate.

Table V, for a limited number of years only, is cyclic,

Table VI, also for a limited number of years, is cyclic.

Table VII shows a rather high rate, and it was stated that many of them "were sadly neglected and often tragically delayed before presenting themselves for treatment." This condition no doubt applies in a great many urban and populous centres, consequently represents the mortality in the mass.

Table VIII, with 35,177 cases over several periods, for a number of years, from various sources, shows a death rate of 1.9 per cent. This indicates the possibility of the reduction to one per cent, or less.

Whether the mortality is increasing or not, we are all in accord that it is too high.

Remember, a case of Appendicitis is constantly growing better or worse, generally the latter.

Teach the laity to avoid cathartics in suspected Appendicitis, to seek early medical advice and operation, whereby the mortality will be practically nil.

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#### DISCUSSION

Dr. George H. Bunch, Columbia:

I heartily indorse the very logical presentation of Dr. Rhame and the necessity for prompt treatment of acute appendicitis. I am familiar with the claim that the mortality of appendicitis is increasing. I can not speak with authority on the general situation, but I am convinced that locally the statement is not true. I believe that our men in general practice are having these cases operated upon earlier; I believe that they are having them operated upon, as a rule, without the preliminary giving of cathartics. I have figures from the two local hospitals in Columbia, which Dr. Rhame asked me to get, figures from the South Carolina Baptist Hospital and the Columbia Hospital. The mortality percentage of the two institutions is essentially the same, so the combined record is given you.

In 1928, of 412 cases of acute appendicitis treated in the two institutions, 15 died, a mortality of almost 4 per cent.

In 1929, of 338 cases, 8 died; 2 plus per cent mortality.

In 1930, of 338 cases, 5 died; 1.5 per cent mortality.

In 1931, of 344 cases, 8 died, 2 plus per cent mortality.

In 1932, of 501 cases, 4 died, 0.8 per cent mortality.

So in this locality, at any rate, there has been reduction in mortality from 4 per cent in 1928 to 0.8 per cent in 1932. For Columbia, the statement that the mortality of appendicitis is increasing is a fallacy.

Dr. Rankin, of the Duke Foundation, says: "A good deal of attention has been drawn to the fact

that the death rate from appendicitis has increased during the last thirty years. The increase is only an apparent increase and is due to change in the classification of deaths from peritonitis by the Bureau of the Census. Many deaths resulting from appendicitis were formerly not charged against appendicitis; hence the increase in number of deaths from appendicitis from 9.7 to 15, and the corresponding decrease in deaths from peritonitis from 15.1 to 1.6 for the 27-year period under consideration."

Those who think the death rate from appendicitis is increasing have failed to take note of this profoundly important factor.

**Dr. C. S. Dean, Anderson:**

Preliminary report from the study of 1774 cases of Appendicitis who were admitted to Anderson County Hospital during the period 1922-32.

	Table showing diagnosis, hospitalization and mortality rates							
	Appendicitis acute suppurative-ruptured	Appendicitis acute gangrenous-ruptured	Appendiceal abscess	Appendicitis acute ruptured	Appendicitis acute gangrenous	Appendicitis acute suppurative	Appendicitis acute catarrhal	Appendicitis chronic
Pre-Oper. Diag.	183	62	35	44	821	359	539	470
Post-Oper. Diag.	170	60	38	48	85	368	544	461
Diag. not agree	13	2	3	4	3	9	5	9
Hours onset oper.	68	41	169	71	50	31	47	
Av. days in Hos.	16.11	19.2	19.4	15.26	10.76	10.18	9.37	8.9
Deaths	22	10	0	6	4	2	3	2
Mortality Rate	12.94	16.66	0	12.5	4.7	.54	.55	.43

Mortality rate in 316 cases all classes of Ruptured Ap. 12.02  
Mortality rate in 1313 cases which are classified as acute 3.98  
Mortality rate in 997 cases of acute unruptured appen. 1.4  
Mortality rate in 820 cases 1922-27 - - - - - 3.03  
Mortality rate in 954 cases 1927-32 - - - - - 2.84  
General Mortality rate in all cases (1774 cases) 3.04

This is a report of the study of 1774 cases of Appendicitis admitted to the Anderson County Hospital from 1922 to 1932 diagnosed as Appendicitis and operated upon for that condition. Cases in which the appendix was taken out during the operation for some other condition have not been tabulated. This work was done by ten different men. Five of these men did the majority of the cases, the other five doing an occasional operation. This table shows some of the pertinent facts from our study of the cases.

We classify our acute cases as: Appendicitis acute suppurative ruptured, Appendicitis acute gangrenous ruptured, Appendiceal abscess and a classification that we have been forced to put in—Appendicitis acute ruptured, the cases that we were not able to detect from a study of the charts whether these were gangrenous or suppurative—and Appendicitis acute gangrenous unruptured, Appendicitis acute suppurative unruptured, and Appendicitis acute catarrhal. You will note from the table that the average hours from onset to operation in all ruptured cases is 87.25. The average hours from onset to operation in ruptured cases, leaving out abscess cases, is 60 hours. Aver-

age hours from onset to operation of all cases unruptured is 42.66, making a difference of 17.34 hours between the ruptured and unruptured. Of the 1313 cases which were classified as "acute," 316 of these were ruptured, (24.07) showing a mortality rate of 12.02. Of the 997 cases of Acute unruptured Appendicitis showed a mortality of 1.4, a difference of about 10.6. Our mortality rate in the 1313 cases was 3.98. The mortality rate in 820 cases of the 1774 from 1922 to 1927 was 3.03. The mortality rate in 954 cases of the 1774 from 1927 to 1932 was 2.84, showing a slight decrease in mortality in the second half of the ten year period.

You will note that in the 38 cases classified as Appendiceal abscess, we had no deaths but it was the longest period of Hospitalization of any class. You will notice that all unruptured cases, including the chronics, had a Hospital stay of 9.8, practically ten days. All ruptured cases, including the abscess cases, had a Hospital stay of 17.5 days. The mortality rate in ruptured cases excepting abscessed cases ranks from 12 to 16 per cent, being the highest in acute gangrenous ruptured. All acute unruptured, excepting the acute gangrenous, we have a mortality of about an average of .5 per cent. It is interesting to note that cases classified as gangrenous, both ruptured and unruptured, carry about four percent higher mortality than any other classification.

In the study of the deceased cases, of which there were 53, we find 41 males, giving us a mortality rate of 5.8 in the total male cases treated. We find 12 females, a mortality rate of 1.1 in the entire number of females treated. We had 43 deaths of our entire whites with a mortality of 2.7. We had 10 deaths among the colored, a mortality rate of 6.4. Another interesting point in the history is that the proportion of females to males is 5 to 3, though the mortality rate in females was just about one-fifth as great. In spite of the fact that we have been taught and re-taught that the taking of laxatives following the onset of abdominal pain means rupture, we could only find a definite statement of having taken laxatives in 204 of our cases.

**Summary:** In the study of this table, in spite of the prevalence of the opinion that the mortality in Appendicitis is increasing, our experience in the last 10 years does not bear out this statement. We wonder if the difference in hours from onset to operation in our ruptured and unruptured cases is sufficient to explain a ten percent higher mortality rate. It is our idea that gangrenous cases, both unruptured and ruptured, show such an increased mortality rate that this must be due to the virulence of the organism for its host.

**Dr. J. Heyward Gibbes, Columbia:**

I was very much impressed with Dr. Rhame's exposition of this subject. I certainly want to

reiterate, for the sake of emphasis, the essence, as I see it, of his paper. If I get it, the essence is that there are two elements which contribute to the mortality of appendicitis, the first of which we might speak of as the time element and the second as the laxative element. I think the statistics from Dr. Bower's paper, as shown on the screen by Dr. Rhame, are tremendously impressive in this particular. In regard to the time element, the mortality rate was 2.22 per cent in those cases admitted within twenty-four hours of the onset of symptoms. In the group receiving laxatives, the mortality rate was over 7 per cent. You see the laxative element is tremendously greater. What I want to point out, in particular, is that this time element offers a tremendous pitfall, in my opinion, in the handling of acute appendicitis by the surgeon. This is a lesson which has been taught to us in Columbia, and taught over a large part of the country, by Dr. LeGrand Guerry. Simply to rush in and sacrifice everything to save time is a mistake. In Bowers' group of cases he has a mortality rate of over 2 per cent in cases operated upon within twenty-four hours of the onset. In my opinion, it is due simply to a failure on his part to know how to appreciate and evaluate of the time element in the handling of these cases. There are some cases of acute appendicitis, more particularly those of a fulminating character, with early rupture, in which haste on the part of the surgeon does not mean increasing the chance of the patient to recover but offers a distinct impediment to the recovery of the patient. Now, in the patient who comes to the hospital after twenty-four hours, who is ruptured, again haste on the part of the surgeon, and failing to evaluate the processes which Nature is bringing into play, haste in opening that abdomen, diminishes the chance of the patient to get well. I sincerely hope that Dr. Guerry will have something to say about this time element and the time element as contributing to the mortality in appendicitis.

Dr. Legrand Guerry, Columbia:

The gentlemen have made some reference to this appendix matter, and it is such a big subject, and there is so much to say, that I hardly know where to pick it up. But I think I shall say this; it might be the wrong thing, and might not be. It seems to me the first point I should like to make is that statistics are valueless unless you begin to define them. For instance, there certainly ought to be no mortality in an ordinary recurrent attack of appendicitis. I say no mortality—anywhere from one-half to one per cent, from some unforeseen factor.

When you begin to talk about acute appendicitis, as I see it (and this is all just a personal experience, born out of thirty years of practice and observation), there is just as much difference in

the mortality in a violently acute but unruptured appendix and the mortality in acute gangrenous appendicitis as there is between recurrent and acute appendicitis.

Very frank, definite acute appendicitis, up to the point of perforation, has been included in a series of 850 cases—acute unperforated cases. Now, a case in the group of acute localized abscess, with a gangrenous perforated appendix, has a quite different story all the way through. There have been about 750 of those gangrenous perforated appendices, with localized abscess, with a mortality of about .10 of one per cent. There have been two or possibly three deaths in the 750 cases.

Here is the whole story; here is the thing that interests me. I think it calls for clinical experience, discriminating judgment, and proper consideration of the time element. I am talking about diffuse peritonitis. There have been about 98 of these cases. I took them to the operating room and operated upon them as soon as I could get them ready. You are all familiar with them—distended belly, pinched face, etc. There has been a mortality of from 9 to 10 per cent in that group.

Now, there is another group, seen at the same time, of about 130, with a mortality of just around 2 per cent. Remember, this is an acute gangrenous perforated appendicitis, with spreading peritonitis—the group of cases in which you get the mortality. These cases, these 130, were handled on the principle of deferred operation. Of course, you want them all before they perforate; you want to get every acute appendicitis before perforation occurs. But the point I am after is that, whether you want to get them before they perforate, or not, there is a good-sized group that, when you see them for the second time, are in the second or the third or the fourth day of their attack; they have beginning peritonitis. If you take that patient and force on top of the load he is already carrying a difficult, serious surgical operation, you are merely inviting disaster. Those we treat on the principle of deferred operation, with a mortality of about 2 per cent.

Dr. William Davis Haggard, Nashville, Tenn.:

Mr. President, I hesitate to say a word, after haranguing this courteous group for so long this morning; but I do want to say that Dr. Guerry has the idea, and that is what I rose to emphasize. You know the average death rate in the average hospital in America is over 10 per cent, and the reason of it is in these bad, delayed cases—what we used to call the third and fourth-day cases. Many of you remember when Ochner brought out the idea; this is a glorification of Ochner's idea. He said this—everybody got it wrong, nearly, because he advocated delay to get the patient to a better period. They misunderstood it. His first rule was: Operate on every patient if the diagnosis

is early and the hospital facilities are adequate; but if the case is late, if the patient has high fever, distension, black vomit, etc., leave him alone. You know, those people used to get well. In the early days I operated on a great many cases of abscess, and the twelfth and fourteenth-day cases all got well, or practically all get well, because we simply open the abdominal wall and run while the pus is running. Don't remove the appendix unless it is simply looking at you; don't dig around for it; don't break down what Nature has spent two weeks in walling off. They get well, and many of them have no further trouble. If they do, you can operate, just as you do in these mild cases. We must not hurry in to operate on these cases. Let them alone, and a good many of them will subside. I had a boy with a big mass in his rectum; if you go to operate on him you may lose him. I believe if you see a man in the early stages, although he has a mass, it may be wrapped up in the omentum, like a child wrapped in a blanket. If a man has tenderness in the loin on the seventh or eighth day, operate on him from the back. If you operate on him in front, don't drain him in front; make a stab wound, and he will get well. If it is a child, and his blood count is 25,000, don't operate on him that day, because he will have pneumonia day after tomorrow.

Dr. R. G. Doughty, Columbia:

I have a great deal of hesitation in discussing this excellent paper, particularly when it has had discussion of such caliber as it has had; but there are one or two things Dr. Guerry brought out that I want to follow up.

In one report two years ago I was particularly struck with the fact that the mortality for the first day (that is, in patients who were seen in the first day of their illness) was about 2.22 per cent; in patients seen forty-eight hours after the illness began it was 5 per cent; seventy-two hours, 7.14 per cent; seventy-two hours plus, 11.11 per cent. In that first paper they carried the time on. On the seventh and eighth days the mor-

tality dropped from 7, 10, 12—around in there, in this particular report of which I am thinking—to practically .5 of one per cent. What did that mean? It meant that it is in these patients seen on the third and fourth days, as Dr. Guerry mentioned, you are getting the mortality; and where the patient has not been seen until the seventh or eighth day that patient has had time to do several things. Appendicitis does not stand still. He has had time to immunize himself to the infection and get it localized, and to avoid the necessity of having his surgeon deal with a general peritonitis.

The report from Anderson showed 35 cases with localized abscess. Their average, when they were seen, was 169 hours from the onset. There was not a single death. The suppurative cases that were operated on were not labeled as localized abscess but were labeled as acute gangrenous, suppurative, etc. They had 100 some odd cases, with a mortality of 12.74 per cent, with an average number of hours' duration, when seen, of 41. In the second group, seen 68 hours after onset, there was a mortality of----- per cent; in the third group, seen 71 hours after onset, there was a mortality of 12 per cent. Now, those cases had not had time to localize their infection themselves; the surgeon had to deal with a general peritonitis. The point Dr. Guerry made is that if these cases are treated conservatively they will localize into a condition that will allow a relatively safe operative procedure, with a low mortality.

Dr. Rhame, closing the Discussion:

I am very grateful to you for your kind discussion. It is not a question of difference of opinion. Of course, you realize in the short space of time allotted me, I could not attempt to go into the diagnosis of appendicitis. I appreciate very much what the gentlemen have said and feel very glad that Dr. Guerry and others mentioned what is so often misunderstood. We all remember Murphy's five points, but very often we do not have the five points.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

OCTOBER, 1933

No. 10

A symposium on silicosis contributed by a group of distinguished clinicians and research workers occupied a prominent place on the program of the annual meeting of the National Tuberculosis Association held in Toronto, June 27-30, 1933. Extracts of the papers, which will be published elsewhere later, are here presented.

### SILICOSIS AND TUBERCULOSIS

A. J. Lanza, specialist in industrial medicine, stated that while it is impossible to estimate accurately the prevalence of silicosis in the general population, studies among employees of trades with a silicotic dust hazard show a high tuberculosis mortality among them. Much of this excess in the tuberculosis death rate may be ascribed to silicosis. In a few instances the prevalence of silicosis has been carefully estimated, but the rates so obtained cannot be applied generally because industrial conditions vary so widely. However, it is apparent that silicosis is a widespread industrial hazard, is probably on the increase, and affects to an appreciable extent the death rate among industrial workers exposed.

Professor S. Lyle Cummins of Wales, Adviser to the (British) Tuberculosis Research Committee, which recently issued an epochal report on tuberculosis among South African natives engaged in gold mining, stated that there are serious lacunae in our knowledge about dust diseases. "Silicosis" is a state of bilateral lung and lymph-node fibrosis, for the most part nodular in type, resulting from the inhalation and the retention in the lung of the dust of hard stone; the particles being in such fine division as to enter the pulmonary alveoli and ultimately the lung tissue where they set up characteristic changes and determine an increased liability to pulmonary tuberculosis. We know, too, from the animal experiments of reliable investigators, that free silica introduced into the tissues, either in its crystalline form or as a solution, sets up inflammatory processes leading on to fibrosis;

and that its presence acts as an adjuvant to the local multiplication of tubercle bacilli.

In South Wales coal miners suffer with a condition corresponding to the silicosis of metalliferous miners, but which does not apparently predispose to fatal lung tuberculosis. These observations question the criteria on which the diagnosis of silicosis is usually made. Studies among gold miners in South Africa provide much accurate information. The dust inhaled by miners on the Rand contains other elements than free silica. Some of the elements of these complex dusts may be adjuvants to the action of free silica and others may tend to neutralize it. We need, said Dr. Cummins, a scientific "recessional" in which to reexamine with an open mind many of the generalizations now accepted as current coin in relation to silicosis and "miners" phthisis.

Pulmonary tuberculosis so readily complicates simple silicosis, said A. R. Riddell of Toronto, that silicotic fibrosis rarely reaches advanced stages without its occurrence. Simply silicosis seldom occasions conscious disability unless the fibrosis is advanced.

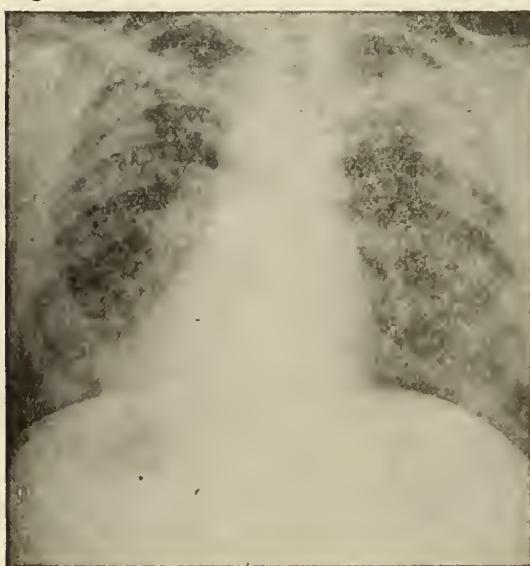
Clinical signs in silicosis are those common to fibrosing lung conditions and therefore not characteristic except that they generally occur throughout the chest and are not confined to circumscribed areas. A lessening of the breath sounds or blanketing together with a shortening of the inspiratory phase, which is at the same time raised in pitch, has diagnostic value. X-ray shadows, when considered in conjunction with a clear history of exposure, are diagnostic.

The teaching that tuberculosis arising among those in silica trades is not infectious cannot be universally entertained. The author has found as great an amount of infection among the wives and children of tuberculous silicotics as among those in contact with ordinary tuberculosis.

Leroy U. Gardiner of Saranac presented a picture of the pathological sequence following inhalation of silica dust. Autopsy material in this country is rare, but this lack is compensated

to some degree by the fact that silicotic conditions can be reproduced in experimental animals.

The first reaction to inhaled silica is non-specific and is probably the same for any type of dust. It consists of accumulations of phagocytes in the subpleural air spaces accompanied by a slight thickening of their walls. By X-ray this may be visualized as a slight diffuse haze beneath the pleura in the mid-portions of the lungs.



Second degree silicosis with tuberculosis. Hilum shadows obscure. Dense mottling in both lungs. Some cloudiness at both apices, particularly at right.

Phagocytes carry the silica to lymphoid tissue within the lung and the mediastinum where nodules of fibrous tissue develop which compress the lymphatic vessels and interfere with the flow of lymph. Phagocytes pass through the walls of the lymphatics and excite fibrosis in the areolar tissue about them. In the roentgenogram the thickened vascular trunks, beaded by minute nodules of specific reaction, are now clearly discernable. Nodules in the tracheo-bronchial nodes enlarge these structures and widen the mediastinal shadow.

When lymphatic obstruction is advanced phagocytes carry dust immediately into all parts of the pulmonary frame-work with the formation of a diffuse fibrosis and multiple nodules in the walls of the terminal air spaces. The roentgenogram discloses great numbers of discrete nodules uniformly scattered throughout the

lung, which are easily visible because surrounded by compensatory emphysema.

Acute silicosis is said to develop in response to excessive concentrations of exceedingly fine dust. Sections of all those seen by the author have been complicated by tuberculosis but the simple form may occur.

When tuberculosis complicates silicosis it may arise from a pre-existing latent infection or from a new one acquired during occupational life. It becomes more common as the amount of silicosis increases. The combination of the two conditions constitutes a new disease entity which is characterized by lesions different from those which either irritant produces alone. In the presence of tuberculosis the silicotic nodule increases in size and its borders become ill-defined and irregular. Its center may caseate but often it does not. Tubercle bacilli are rare or absent. Conglomerations of nodules imbedded in a matrix of dense pigmented leather-like scar tissue are common in the mild lungs and are frequently bilateral. Foci of caseation or even cavities may occur within such areas. Such changes are demonstrable both by roentgenogram and postmortem sections. The cause of the susceptibility of the silicotic lung to tuberculosis remains to be demonstrated although various experimental data have shed some light upon the character of the process.

Willis S. Lemon and George M. Higgins of Rochester, Minnesota described the development of the pulmonary silicotic nodule in the experimental animal. The amount and the situation of lymphatic tissue determine not only the site but the physical characteristics of the developing lesions. They become massive and conglomerate in the progressively smaller and more discrete as the sizes of the bronchi decrease. Lesions of variable size occur in the subpleural regions.

Henry K. Pancoast and Eugene P. Pendergrass of Philadelphia described the roentgenological aspects of this subject. The roentgen examination is the most exact means of determining the presence of silicosis, the degree of progression and the differential diagnosis.

Distributed by the New Jersey Tuberculosis League, Inc., 15 East Kinney Street, Newark, New Jersey.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "EXPLORATORY LAPAROTOMY OR THE McBURNEY INCISION?"

The following is to a great extent a recapitulation of an editorial by Dr. J. Calvin Sandison in the Southern Surgeon Vol. II, June 1933. Due to the frequent practice of removing the appendix through a McBurney incision upon such an unsatisfactory diagnosis as chronic appendicitis, the discussion of this subject is most timely and appropriate.

In the first place a diagnosis of chronic appendicitis is difficult to establish—X-rays and modern laboratory means notwithstanding. Some authors go so far as to deny the existence of this disease. Pain in the right lower quadrant may be caused by renal calculi, pyelitis, gall bladder disease, visceroptosis, tubal and ovarian disease in women, and many other conditions. By no means can all of these be excluded even by a most thorough examination. Such being the cause it seems most unwise to perform such a limited operation as the removal of the appendix through a McBurney incision, when we can neither make a positive diagnosis of chronic appendicitis nor exclude other diseases which may be the cause of the symptoms.

In operating for an abdominal condition the nature of which is not definitely known the incision used should permit a thorough exploration as well as treatment of any condition likely to be found. It is often most important to

know that certain diseases are not present. A McBurney incision practically precludes all of this. The field is limited to the head of the cecum, enlargement of the incision gives comparatively little additional room and at times tends to weaken the abdominal wall. The result very often is that the symptoms are not relieved by the removal of the appendix and a second operation becomes necessary to ascertain the real cause of the trouble.

Even though the condition is one of appendicitis, the McBurney incision is not always satisfactory. The appendix may be so situated or in such a condition that its removal is very difficult through such a limited incision. In such cases there is great danger of doing irreparable damage—possibly unnoticed at the time. A short right rectus incision which could be easily lengthened as necessary would obviate most of these difficulties.

The author seems to think that there is very little use for the McBurney incision except in cases of tense appendicæl abscesses in this region. He does say that if there is any justification for this incision it is in acute appendicitis, however in these cases he thinks the right rectus incision preferable. I myself think the use of the McBurney incision should be limited practically to acute appendicitis in children, young adult males, and to appendicæl abscesses at all ages.

## BOOK REVIEWS

FOOD, NUTRITION AND HEALTH, by E. V. McCollum, Ph.D., Sc.D. and J. Ernestine Becker, M.A., Professor, and Associate, of Biochemistry, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland. Third Edition Rewritten.

Published by E. V. McCollum and J. Ernestine Becker East End Post Station, Baltimore, Md. Price \$1.50 Postpaid. All rights reserved., Baltimore, Maryland.

There are no higher authorities anywhere on nutrition and health than McCollum and his co-workers of the Johns Hopkins School. Perhaps McCollum has done more than any other single individual to stimulate thought and action on the important role of the vitamins. It required a long time for the medical profession in general to become keenly interested in the somewhat ultra-scientific yet extremely important basic principles of nutrition in relationship to health. Fortunately the profession is thoroughly awake on this subject now as indeed is the layman and there is little doubt that this wide spread knowledge has added tremendously to the prolongation of life in this country.

THE HISTORY AND EPIDEMIOLOGY OF SYPHILIS, by Wm. Allen Pusey, A.M., M.D., LLD. Professor of Dermatology Emeritus University of Illinois. Sometime President of the American Dermatological Association and of the American Medical Association. \$2.00 postpaid. Charles C. Thomas, Springfield Illinois, Baltimore, Maryland.

Anything from the pen of Dr. Pusey commands the immediate interest of the medical profession of this and other countries. While this book is somewhat of the nature of revised comments on the same subject in a much larger volume written many years ago the subject has been brought up to date in epitome form most attractive to the modern student of syphilis. The master minds who have advanced our knowledge of syphilis have been given due credit. The illustrations are admirable and the printers have presented a volume beautiful in appearance and thus so inviting that one will not be inclined to put the book down without reading it from cover to cover.

NERVOUS BREAKDOWN: ITS CAUSE AND CURE, by W. Beran Wolfe, M.D., Director, the Community Church Mental Hygiene Clinic, N. Y. Farrar & Rinehart, Incorporated, Publishers, New York.

The contents of this volume are as follows under each head being a simple outline easily understood by the physician or the intelligent layman:

Author's Preface; Chapter One—Of Causes; Chapter Two—Of Symptoms; Chapter Three—Of Cases and Cures—Part I; Chapter Four—Of Cases and Cures—Part II; Chapter Five—Of Cases and Cures—Part III; Chapter Six—Plain Words to Patients; Chapter Seven—Of Creative Self-Realization.

There may be some doubt about the extent of the knowledge of one's own case in the domain of nervous diseases the patient should be permitted to be in possession of. This is a cleverly written book, however, and may be safely placed in the hands of carefully selected so called nervous breakdown cases. We feel that the author gives sound advice when he says that the patient should first consult his family doctor and if need be placed by him in the hands of a competent psychiatrist. We believe the psychiatrists have done much to assist in unravelling successfully many hitherto unsolved problems of the nervous breakdown type.

The author calls attention to the large number of cases of nervous breakdowns coming along with the depression years. From a statistical standpoint it may be possible that good health has been promoted in many cases through the restrictions of the period in which we are passing. It will be of interest to look back when the depression is over long enough and see whether or not there is a clear cut clinical entity of nervous disorders as a direct result of the depression. The book is well worth reading and contains many valuable suggestions for the management of nervous breakdowns.

PSYLLIUM SEED: THE LATEST LAXATIVE, A SCIENTIFIC TREATISE, by Dr. J. F. Montague. Medical Director, Montague Hospital for Intestinal Ailments; Late of University and Bellevue Hospital Medical College; Fellow American Medical Association; Fellow New York Academy of Sciences; Fellow New York Pathological Society; Sometime Fellow New York Academy of Medicine And American College of Surgeons. 20 illustrations. Montague Hospital for Intestinal Ailments, New York City.

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Fellows:

Charleston

Cannon, Joseph Henry ---- Internal Medicine

Johnson, Francis Bonneau, Clinical Pathology

Lynch, Kenneth Merrill ----- Pathology

Rudisill, Hillyer, Jr. ----- Radiology

Wilson, Robert ----- Internal Medicine

Columbia

Gibbes, James Heyward -- Internal Medicine

Greenville

Smith, Hugh Percival ---- Internal Medicine

Seneca

Hines, Edgar Alphonso ----- Pediatrics

Associates

Columbia

Heyward, Nathaniel Barnwell, Int. Medicine

Horger, Eugene Leroy ---- Neuropsychiatry

Mayer, Orlando Benedict -- Internal Medicine

THE MEDICAL CLINICS OF NORTH AMERICA: (Issued serially, one number every other month.) Volume 17, Number 2. (Chicago Number—September 1933) Octavo of 233 pages with 36 illustrations. Per Clinic Year, July 1933 to May 1934. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

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# The Journal of the South Carolina Medical Association

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<sup>1</sup>J. Soc. Chem. Ind., 1923, 42, 185, 205.

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\*J. C. Drummond and T. P. Hilditch: The Relative Values of Cod Liver Oils from Various Sources, His Majesty's Stationery Office, London, 1930

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# The Journal

## OF THE

# South Carolina Medical Association

Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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### EDITORIAL

#### THE FEDERAL EMERGENCY RELIEF FOR THE INDIGENT SICK

President R. E. Abell and the special committee of which Dr. S. E. Harmon is the Chairman have been giving serious thought to the South Carolina program. The fee schedule has been sent down to all the County Societies and many of them have taken official action thereon. Some of the county societies do not approve of the fee schedule and others object to certain features of it. As this issue of the Journal goes to press further efforts are being made to secure satisfactory adjustment as reflected in the action of the various constituent county societies. It may take some time to bring all of this about inasmuch as the requests must go through the usual official channels of the Federal Government to be passed on by the proper officers in Washington. It is confidently believed that some agreeable standardized practice may soon develop for the handling of this medical service to the indigent sick.

#### DEATH OF DR. W. M. LESTER

In the passing of Dr. Lester one of the best known South Carolina doctors will be missed from organized medicine. Dr. Lester spent the greater part of his life as a general practitioner in Columbia. He was for many years a member of the State Board of Health and at the time of his resignation to accept the superintendency of the Children's Division of the South Carolina State Sanatorium was Vice President of the Board. Dr. Lester served unselfishly in many fields of medical endeavor. He was popular with his professional confreres and esteemed by a large number of friends in all walks of life.

#### THE CHARLESTON MEETING

The basic plans for the 1934 meeting of the State Association have been pretty well settled upon by the scientific committee of which Dr. Kenneth M. Lynch of Charleston is the Chairman. The President has received ac-

ceptances from the invitation extended invited guests. The committee decided to follow up in some degree the highly successful arrangement of the Spartanburg program this year that is, invitations to the well defined specialties to be represented on the program. Efforts will be made to stress the coming year an obstetrical program looking toward the continued effort to reduce the maternal mortality in South Carolina. This subject is of such extreme importance that it has been the policy of the State Association to emphasize it frequently in recent years and there appears to be good reason to believe that progress is being made.

---

#### THE LEGISLATIVE COMMITTEE

One of the most important committees of the State Medical Association is that on Legislation. Dr. R. G. Doughty of Columbia has been appointed Chairman and it is expected that a strong committee in every county society will be designated to assist Dr. Doughty's committee during the coming session of the Legislature when problems arise needing careful consideration. The crux of the matter in in-

fluencing legislation is in the hands of the physicians back in the constituent county society. The family physicians of members of the Legislature may have a tremendous influence in shaping the course of events by contact with the various members of the General Assembly. We do not know of course at this time just what legislation is contemplated bearing upon the activities of South Carolina medicine but the possibilities are of extreme importance every year. It may be safely said that the medical profession of South Carolina in its organized capacity has for the most part been pretty generously supported in the major phases of medical legislation in the past. Naturally the Legislature will turn to medical men when difficult situations arise for advice and it is usually the home doctor who is in position to be of tremendous service. We bespeak the loyal support of the State Committee headed by Dr. Doughty on the part of every physician in South Carolina when called upon to do so. It is not long now before the Legislature convenes and we should be thinking about probable legislation affecting the health of the people of South Carolina.

## ORIGINAL ARTICLES

\*PARINAUD'S CONJUNCTIVITIS;  
CASE REPORT*Thos. R. Gaines, M.D., Anderson, S. C.*

In 1889 Parinaud, a Frenchman, described a condition typified by monocular conjunctival infection, with follicle or granule formation, and with involvement of the lymphatics on the affected side. He thought the disease to be of animal origin and suspected its transmission to humans by cats. Other French observers held to this idea, and in the literature of today mention is usually made as to whether or not there has been any animal contact.

An idea as to the rarity of the disease, or syndrome, may be gained from the fact that personal communications were addressed to all ophthalmologists in this State, asking if such a case had ever been seen or reported. Replies were received from sixteen. One man stated he had seen 3 clinical cases, but had reported none. Of the remaining replies, all stated they had never seen a case in the State. I am unable to find in the literature a case reported from South Carolina.

The etiology is an unsettled question. It occurs in temperate climates, affects both sexes, old and young, but is most frequent in the young. A history of association with animals is obtained in a fair percentage of cases. Verhoeff of Boston, has devoted much study to the condition, reporting 18 cases, in 17 of which he found a filamentous organism which he called a lepto-thrix.

However since the time of his report other men failed to find this organism, only a few confirming his findings. Other cases have been reported which were later found to be due to tuberculosis. Cases of great similarity have been reported by Pascheff, differing in fine points, and known as Conjunctivitis Infectiosa Necroticans. Still others were reported by Patton and Gifford as "Agricultural Conjunctivitis." Vail reported the first case of ocular tularemia in this country. All the above men-

tioned conditions present a monocular conjunctival infection with glandular involvement.

*Symptoms*

The onset is usually rather sudden, with moderate swelling of one or both lids of one eye, mucoid discharge, conjunctival redness, and almost simultaneous involvement of the lymphatics of the face, jaw and neck of the affected side. Several writers have described mild malaise with slight fever in the beginning. Photophobia and lacrimation are mild, if present. Examination of the lids reveals translucent, polypoid projections of the conjunctiva along the fornices. They resemble the follicles seen in follicular conjunctivitis, being larger, and more limited in number and distribution. As a rule there is no corneal involvement, the injection fading toward the limbus. The glands affected are one or more of the following; preauricular, submaxillary, anterior and posterior cervicals. They are enlarged, may be slightly tender, usually firm, and seldom suppurate. The duration of the disease varies from one to three months.

*Pathology*

Verhoeff's description is as follows: "The essential conjunctival lesions consist of focal areas situated immediately beneath the epithelium, infiltrated with endothelial phagocytes in various stages of necrosis. Clinically these foci appear as opaque grayish areas about one half to 4 mm. in diameter. In individual cases they may be single or multiple, and may occur in any part of the conjunctiva including the bulbar portion. They contain the leptothrixes in great numbers. Beneath these areas more or less granulation tissue is produced which may cause the conjunctiva to project in the form of polypoid nodules. The latter occur chiefly on the fornices. Ulceration seldom, if ever occurs. In the affected regions, the conjunctival tissue is congested, edematous, and densely infiltrated with chronic inflammatory cells, among which plasma cells largely predominate."

### *Diagnosis*

The symptoms and findings as already described make the diagnosis fairly simple. The disease must be differentiated from, (1) trachoma, which usually attacks both eyes, causes symptoms of greater severity, less glandular involvement, and frequent corneal complications; (2) tuberculosis of the eye, which usually gives a positive tuberculin reaction, and injection of infected material into guinea pigs causes the development of tubercular lesions; (3) ocular tularemia, which is differentiated by the complement fixation test.

### *Treatment*

The disease is self limited, recovery usually taking place in from two to three months. Mild collyria are indicated. Verhoeff advocated removal of the vegetations by excision.

Of the cases reported I have records of only 37. A brief resume of these gives the following findings: Total number cases reported 37. Of these one was found to be of tubercular origin, another proved to be tularemia, leaving a total of 35 cases to be considered. Of these 19 were in males, 15 in females, 1 not specified. In 21 cases the right eye was affected, in 14 the left; the upper lid in 12, lower lid in 10, both lids in 11, not specified 1; preauricular gland involved in 33, submaxillary in 23, cervical in 14 and parotid in 1 case; history of trauma in 6; animal contact in 10; suppuration in 2; average age 17.7 yrs; most cases occurred in the winter months with January leading with 6, December 5, November 4, October 3.

### *Case Report*

School Girl, age 11, was seen on October 12, 1931 with moderate drooping and redness of the left upper lid, together with a peculiar enlargement of the lymphatics in front of, and below the left ear.

Present illness began six days ago with redness of the left eye with slight swelling of the upper lid, gradually growing worse. Slight lacrimation with itching have been the only subjective symptoms, there being no pain, photophobia or gumming of the lids. Swelling of the pre-auricular gland was first noted on October 11th. Six cats were kept at the home, one of which became ill and died about a week before onset of present illness, having a convulsion and dying in about 15 hours. One dog

was kept. All were pets and had been handled by the patient.

The family history showed that her father died at the age of 46 from "blood poisoning." Mother living and well, two sisters in good health; the first and last children in the family were stillborn. No history of any hereditary disease.

The past history was that she had had the usual diseases of childhood, none of them being serious except scarlet fever, when both ear drums were incised.

### *Examination*

She was very healthy in appearance, apparently feeling fine and in the best of spirits. Age 11, height 56 1-2 ins., wt. 69 3-4 lbs. The left upper lid was moderately swollen and reddened, giving the appearance of drooping. There was moderate conjunctival injection and redness, most marked on the upper lid. Along the fornix of the upper lid was seen a row of elevated granules, increasing in size toward the outer canthus, where they spread out over a large area, in the center of which were several longer polypoid translucent granules, the tips of one or two having a tinge of black. The lower lid was negative except for slight puffiness and redness. No pus was seen. The pre-auricular lymphatic gland was noticeably enlarged, being about partridge egg size. The glands at the angle of the jaw and the posterior cervicals were also enlarged, but less markedly so. No redness, and on light palpation, no tenderness or fluctuation was noticed. General physical examination was negative. Blood Wasserman negative. Complement fixation test for tularemia negative. Sections were taken from the largest vegetations and stained according to the method described by Verhoeff, a search made for the lepto-thrix, none being found. Tuberculosis was not suspected since there was a sudden onset, lack of suppuration of the glands and no suggestive family or personal history.

She was seen at frequent intervals for a period of about 3 months during which time the symptoms gradually cleared up, and all glandular enlargement disappeared. The treatment consisted in touching the affected area with 1-2 of 1 per cent silver nitrate at each office visit, together with a mild boric and camphor wash at home.

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**DISCUSSION**

**Dr. Walter Bristow, Columbia:**

The eye condition commonly known as Parinaud's Conjunctivitis is rare enough to warrant the reporting of any case which might occur in the practice of ophthalmology. Dr. Gaines is to be commended for bringing this subject to our attention, and for putting his case on record.

I wish to say a word about the etiology. As Dr. Gaines has said, the etiology is an unsettled question, and there are perhaps several unrelated etiological factors. Indeed, it has been suggested that this form of monocular conjunctivitis with glandular involvement be called Parinaud's Syndrome instead of Parinaud's Conjunctivitis.

Since the advent of numerous cases of tularemia in the southern states within the past few years it has occurred to me that a good many cases of monocular conjunctivitis which have been reported as Parinaud's Conjunctivitis were in reality the oculo-glandular type of this disease. This idea is not original with me but has been expressed by other ophthalmologists in the South. Dr. Gaines does not state just when during the disease he made the agglutination test for tularemia in his case. It is a well established fact that the agglutination test may be negative in the early stages of tularemia, the agglutinin reaching its maximum strength five or six months after the onset of the disease. A point against Dr. Gaines' case being Primary Ophthalmic Tularemia is the fact that there was no suppuration of the involved lymphatic glands. Suppuration is usually present in most cases of oculo-glandular tularemia.

**Dr. J. W. Jervey, Jr., Greenville:**

If Dr. Gaines had to ask me to discuss his paper, I wish he had selected some other subject. Perfectly frankly, I know very little about Parinaud's conjunctivitis. I have seen only one case that I recall, and that was before coming to South Carolina to practice. I hope Dr. Gaines will make a report of this case before the scientific meeting of our South Carolina Society of Otolaryngology, because, while it is extremely interesting, I do not think the average general practitioner is particularly interested in this type of disease, but it should prove of interest to us.

As regards the etiology of Parinaud's conjunctivitis, it is pretty definitely established now, I think, that the condition is an entity and is due to a leptothis. There has been very little in the literature for the last sixteen years; but last year, before the American Ophthalmological Society, a paper was presented by Drs. King and Verhoeff in which they discussed the records of all the cases seen in the Massachusetts Eye and Ear Infirmary for the past twenty-five years. It seems to me that the etiology is fairly clear. Animal experimentation, however, has not been very satisfactory. Lesions have been obtained in rabbits and guinea pigs resembling those of this condition, but the organisms have not been recovered.

Possibly the best reason for bringing this to your attention is to let you know that when you see a monolateral affection of this character in the eye you need not be particularly disturbed. If it is Parinaud's conjunctivitis it will get well by itself, in all probability. If it is tularemia, you can have a positive fixation test made; and if it is tuberculosis you will get a positive tuberculin reaction or some other definite sign.

---

**\*POSTOPERATIVE ATELECTASIS**

*By A. E. Baker, Jr., M.D., Charleston, S. C.*

Atelectasis, or pulmonary collapse, is not recognized as a frequent postoperative complication, but every surgeon at some time will have it occur and therefore must be prepared to institute immediate treatment.

The symptoms are sufficient to cause alarm and to bring many anxious moments to the patient and to his loved ones who are depending upon you to bring about an early change of the condition.

During the past few years we have had occasion to observe and treat several such cases occurring at the Baker Sanatorium. From these observations we have come to certain

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\*Read before the South Carolina Medical Association, Spartanburg, S. C., April 19, 1933.

cal vertebrae. Forty-eight hours afterwards conclusions which have been of value to us in postoperative treatment.

Postoperative Atelectasis varies considerably in degree from a massive collapse to a simple hypoventilation.

In our three cases of massive collapse the onset was very sudden, within 48 hours after operation, characterized by a rapid rise in pulse rate to 120 or 140, a rapid rise in temperature to 103 F. or 104 F., and a respiratory rate of 30 to 40. In two cases there was cyanosis and the patients appeared extremely ill. Cough was suppressed and expectoration scanty. There was an elevation in the total white blood count. Often the white count will reach 30,000 with 90 per cent polynuclear cells. These patients are inclined to lie on the affected side.

The physical signs are very much the same as found in consolidation. There is limited expansion on the affected side, percussion note is dull or flat with hyperresonance on the unaffected side. Fremitus is increased and breath sounds in those cases where the bronchus is completely obstructed, is absent, however in those cases where there is some patency in the bronchial tree, tubular breathing may be detected.

A decided displacement of the heart towards the affected side is always present, however small the lesion, and is a most important factor in differentiating Atelectasis from pneumonia.

More often than we recognize it, do we have collapse in some portion of a lung accompanied by milder symptoms. How often have we found signs of pneumonia a few days after operation and then to our surprise they disappear a day or two later. This is most probably Atelectasis. This complication in its onset bears a striking resemblance to pneumonia and there is little doubt that many cases are being diagnosed as postoperative pneumonia.

A mild, symptomless form of Atelectasis takes place after every abdominal operation in the form of a partial collapse of the bases of both lungs. This is especially true after upper abdominal operations. This condition is known as postoperative pulmonary hypoventilation.

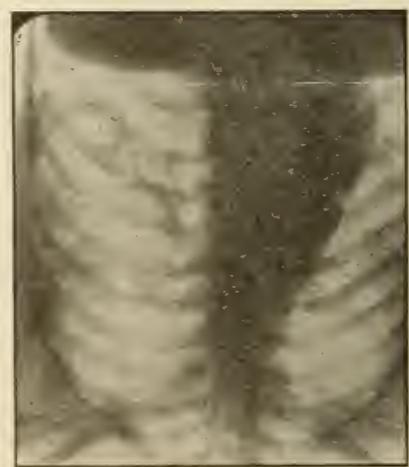
Through the kind assistance and cooperation of Dr. R. B. Taft, we have X-Rayed the chest in a series of cases before and within 48 hours after abdominal operations in order to deter-

mine how much hypoventilation is to be expected.

The anesthetic used was nitrous oxide oxygen and ether. We found that within 48 hours after abdominal operations there was a partial collapse at both lung bases, in every case. Before operation the diaphragms were found about on the level of the 11th thoracic vertebrae. For 48 hours after operation the diaphragm level was about the 8th or 9th vertebrae. This resulting density at the bases of each lung has frequently been considered as pathologic and spoken of as pneumonia, but it should be regarded as normal, as it follows every abdominal operation.

Postoperative pneumonia, at the bases, is undoubtedly a secondary infection of these hypoventilated areas, which are fertile fields for infection.

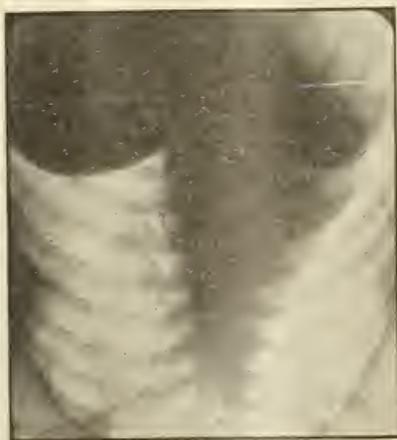
To illustrate hypoventilation, I wish to mention two cases which show what takes place in the thoracic cavity after the average abdominal operation



First Case showing level of diaphragm before abdominal operation.

(1). Mrs. S. Age 46. Fibromyoma of the uterus. I did a subtotal hysterectomy. Ether anesthetic. Before operation her diaphragm measured 21 cm below the transverse process of the 2nd cervical vertebrae. Forty-eight hours after operation, the distance was 16 1-2 cm, a difference of 4 1-2 cm. Both pictures were taken at the same degree of inspiration.

(2). Mrs. C. Age 24. Uterine suspension and removal of appendix. Before operation the diaphragm was 24 cm. below the 2nd cervi-



Same case within 48 hours after operation, showing hypoventilation at base of lungs

18 cm. below, a difference of 6 cm. The diaphragm on expiration before operation is at or about the same level as it is on deep inspiration after operation. These findings correspond with those of Miller, Oveholt and Pendergrass.

The cause of Atelectasis following operation is still vague. Some feel that it is caused by secretions excreted at time of anesthesia which later blocks a bronchus. Corylton and Birnham have conclusively shown that this is possible. However, Atelectasis occurs as often after a local or spinal anesthetic as it does after an inhalation anesthetic, therefore we must consider the reflex theory of Scott, who believes that there is a reflex contraction of the lung rather than a collapse from absorption of air. This spasmotic closure is not at the bronchiales but at the alveolar canals, where histologists have demonstrated true sphincter muscles. Pasteur states that the cause is a partial paralysis of the diaphragm, very much as is seen after phrenectomy. Diminished lung capacity regardless of its cause, predisposes to Atelectasis and pneumonia. Any means by which poor aeration can be overcome is therefore of value.

Some deaths have been reported when there was a massive collapse of both lungs, but these are few. The prognosis of Atelectasis is usually very good. All of our cases were out of danger within two days, although some symptoms persisted for a week. Some cases clear up completely within a few hours.

Atelectasis and this so called pulmonary hypoventilation, may be prevented by the admin-

istration of carbon dioxide to the patient before he leaves the operating room. Graham of St. Louis has his patients given carbon dioxide as soon as the anesthetic is stopped, that is, while the incision is being closed. If inspiration becomes shallow after patient reaches his room, more carbon dioxide is given. We have recently adopted this routine. It is not necessary to give much carbon dioxide. A few deep breaths of this stimulant is sufficient to avoid a collapse of any portion of the lung. Scott and Cutler have reduced the incidence of collapse 75 per cent by this procedure.

The treatment consists in the administration of carbon dioxide. Cases of massive collapse have been known to clear up in 72 hours from carbon dioxide alone. Postural treatment by which the patient is placed on his affected side, having him breath deeply and cough, is a safe and valuable procedure.

Postural drainage together with carbon dioxide, is usually sufficient to overcome most any collapse. Should this treatment fail, a bronchoscopic examination may reveal and relieve an obstruction.

## DISCUSSION

Dr. W. A. Smith, Charleston:

Keeping in mind the mechanism of respiration and especially that specific quality of lung tissue—elasticity—it will readily be understood that if interference with the ingress of air through the trachea and bronchi or with the activity of the contraction of the muscular attachments to the chest wall or diaphragm, collapse will occur.

A certain amount of atelectasis is normally found especially at the bases and margins of the lungs in individuals at rest or among those of limited physical activities. It has no pathological significance here being due to pulmonary recoil along with diminished use of the respiratory muscles. It occurs frequently in bedridden patients. In these, especially the aged, it might be conducive to bronchopneumonia. The characteristic physical sign of this is the fine rale, the so called "atelectatic rale."

When obstruction occurs in any portion of the canalicular system of the lung, collapse of the territory supplied soon occurs as the entrapped air is absorbed by the blood and the walls of the alveolar structures fall together. The extent of collapse is determined by the size of the afferent bronchus. The collapse might be lobular, multi-lobular, lobar or even a whole lung if the main bronchus be occluded. The term "massive collapse" is commonly applied when large areas are affected.

Postoperative massive collapse is a striking example of obstructive atelectasis and is amply proven by the work of Corrylos and Burnbaum. Here a viscid secretion usually infected, occludes a large bronchus and due to the impairment of the mechanism of pulmonary drainage,—the cough reflex, bronchial peristalsis—cilia movement—brought about by anesthesia, narcosis and decubitus, collapse results. The type four pneumococcus is said to be frequently present.

In treating this condition many cases will clear up by simply a change of position and ordinary bedside care. The more severe types demand other measures. By placing the patient on the non-affected side and having him cough and especially if he is rolled from side to side the plug will be brought up and the lung will clear.

The inhalation of carbon dioxid is an effective measure. This causes dilatation of the bronchi and releases the plug.

I have on several occasions used artificial pneumothorax. The injection of 500 cc of air into the affected side will reduce the negative pressure and relax the lung and enable the secretion to be more readily brought up.

The recent work of Van Allen and Jung demonstrating the collateral air circulation between secondary lobules is probably the explanation of why atelectasis does not occur more frequently especially in the various types of bronchitis with thickened viscid secretion.

### CHRONIC EMPYEMA

By George H. Bunch, M.D., and Emmet L. Madden, M.D., Columbia, S. C.

This paper is written in behalf of a class of patients who from their disease are often such helpless and hopeless invalids that they make a pathetic appeal for relief. Our experience, although limited, has given results in uncomplicated cases that have been so satisfactory that we are enthusiastic advocates of every case of chronic empyema being given the opportunity for cure that is offered by surgery.

Chronic empyema is practically always preceded by acute empyema and chronicity in most cases is the result of improper treatment of the acute condition. Without drainage acute empyema probably always becomes chronic. Operative drainage of acute empyema is done by the open method and at thoracotomy the surgeon should be sure that drainage is both dependent and adequate. Drainage tubes should be tied in place. When lost in the chest

they become foreign bodies which cause chronic empyema. Drainage tubes should be removed on the tenth or twelfth day if the temperature approximates normal. If fever persists a secondary pus pocket should be sought for and drained. We do not believe a collapsed lung after massive empyema can expand with large drainage tubes in place. Tubes should be removed before the lung is hopelessly bound by thickened pleura if chronic empyema is to be prevented.

Acute empyema complicated by bronchial fistula tends to become chronic. Tuberculous empyema does not heal after thoracotomy and should be drained by the closed method. Dakin solution has no effect on tubercle bacilli.

The diagnosis of chronic empyema although usually obvious is not always easy. When unrecognized it is often treated for pulmonary tuberculosis. The differentiation between lung abscess, bronchiectasis and empyema cannot always be made. Indeed all three conditions may be present in the same lung. Empyema often comes from the rupture of a peripheral lung abscess into the pleural cavity and lung abscess may develop from bronchiectasis. History, physical examination and X-Ray study are necessary to proper understanding and every case of chronic empyema should have a smear and a culture made of the pus obtained by thoracentesis. If no organisms are found the case should be considered tuberculous. When there is a discharging sinus tuberculosis may be identified by microscopical examination of a biopsy specimen of pleura.

The symptoms of chronic empyema vary with the age of the patient, the extent and the duration of the disease and its complications. An undrained empyema if massive is flat on percussion and displaces the heart. If the thoracotomy wound is widely open, and the lung collapsed there are the classical signs of pneumothorax. Most often there is a partially closed wound imperfectly draining, a fibrous encapsulated cavity that may vary greatly in size, shape and location. The temperature, the blood count and the anemia vary with the pathology. Dyspnea varies with toxemia and mechanical embarrassment to respiration. Cases with bronchial fistulae cough up much foul smelling pus.

Children in whom old empyema has not been drained or in whom pus has reaccumulated after the closure of the thoracotomy wound have clubbed fingers characteristic of chronic respiratory disease. They also have spinal curvature from asymmetrical chest development.

Without operative relief chronic empyema is incurable. Treated expectantly the best the patient can hope for is not to get worse. Progressive invalidism is the rule. To be effective surgical treatment must afford adequate drainage until infection disappears and the lung be given time, if it will, to expand and obliterate the empyema cavity. We have had no experience with closed drainage and tidal irrigation in chronic empyema as advocated by Hart. Most cases come with unrecognized empyema that has never been drained or if operation has been done the thoracotomy wound has completely or partially closed so that there has been a reaccumulation of pus. Whether there is a discharging sinus or not it is remarkable what reduction in size takes place in the empyema cavity after adequate drainage is given. The temperature becomes normal, the appetite improves and weight and strength increase. Graham states that 60 per cent of cases of chronic empyema can be cured by adequate drainage. In our experience after some weeks the patient reaches a stage of maximum general improvement. As long as the cavity gets smaller, however, delay is advisable. When local improvement ceases we have resorted to modified thoracoplasty to complete the cure. Lillenthal advises stripping the visceral pleura from the collapsed lung or if this decortication is not feasible he makes multiple incisions in the pleura to free the lung from pleural restraint and give opportunity for expansion. At operation in our cases most of the cavity is obliterated by thoracoplasty and a pedunculated muscle flap as large as obtainable is sutured into the remaining cavity. By forming granulation tissue it ultimately fills a space many times its original size.

If the empyema cavity is large and the condition of the patient is not good thoracoplasty should be done in several stages. Cases complicated by large or multiple lung abscess may have to have complete instead of partial thoracoplasty done on the affected side to afford col-

lapse sufficient for cure. After closed drainage of chronic tuberculous empyema thoracoplasty may have to be done to cure the patient. All our operative work has been done under local anaesthesia. These people are anemic and should be transfused before operation. After operation a typed and matched donor should be available for a second transfusion. Most patients are symptom free a week or two after operation although the wound may not completely heal for several months depending upon how much of the cavity is obliterated by thoracoplasty and how much has to be filled by granulation.

#### *Case I.*

E.E.M., white, male, age 21, Lancaster, S. C., admitted into Baptist Hospital Feb. 21, 1931 with diagnosis of chronic empyema, confirmed by physical examination and fluoroscopic study made at State Park.

Patient's ill health began with pneumonia Jan. 1929 when he spent 2 months in bed since when he has been weak and sick. His normal weight is 150 lbs., his present weight is 128. His present complaint is cough and weakness. He has never been operated upon. He is pale, undernourished and ill, T 98, P 84, R 20. Physical examination shows marked reduction of the right chest with limited motion. There is dullness over the entire side with flatness at the base. No rales are heard but breath sounds are impaired. The skin about the right breast pits on pressure. Thick white pus containing pneumococci was obtained by needle posteriorly. The leucocytes are 9000 with 68 per cent polys and hemoglobin 62 per cent.

March 2, 1931 thoracotomy was done and a large empyema cavity of 2 years duration was drained. His general condition improved. March 19, 1931 parts of 5 ribs were removed so as to collapse the cavity. April 10, 1931 he was dismissed convalescent with his wound granulating.

#### *Case II.*

J. S. B., Hartsville, S. C., white, male, age 32, admitted into Baptist Hospital October 3, 1931; T 98, P 96, R 20.

He had thoracotomy done elsewhere, Nov. 1930, for cough, high fever and pain in his right chest since when the wound continued to

discharge although a second operation had been done to close it.

The patient is well nourished with normal chest findings except for a discharging sinus on the right with sonorous rales over the right base. The leucocytes are 8800 with 60 per cent polys and hemoglobin 85 per cent. A smear of the pus contains staphylococci.

On October 18, 1931 4 ribs were resected and the empyema cavity almost filled with a pedunculated muscle flap. October 30, 1931 he was dismissed with the wound closing rapidly.

#### *Case III.*

K. G., white boy, age 9, Newberry, S. C. admitted into Baptist Hospital Jan. 9, 1932; T 99.2, P 110, R 28.

The patient comes because of a discharging sinus in the left chest from a drainage operation for empyema done by another surgeon a year before.

There is marked deformity with flattening of entire left chest. The percussion note is dull. Fine rales are heard over the base. The leucocytes are 8200, polys 62 per cent, hemoglobin 75 per cent.

At operation January 2, 1932 an encapsulated empyema was found. Four ribs were resected and the top of the abscess cavity filled with a pedunculated muscle flap which was kept in place by pressure from gauze packing from below. Dakin solution was injected through tubes placed deep in the wound at the time of operation.

The patient was dismissed January 30, 1932, with the wound granulating satisfactorily.

#### *Case IV.*

I. S., white, male, age 25, Wards, S. C. admitted to Baptist Hospital January 31, 1931; T 98, P 80, R 18.

Eight months ago, after having been sick in bed for 7 weeks with what was diagnosed typhoid fever, he had pneumonia and was operated upon for empyema elsewhere in Oct. 1930. In 5 weeks his wound closed and had to be reopened. Each time of operation about a quart of pus escaped. He now has been in bed 4 or 5 months with a draining sinus. He has had multiple lesions on his face, suggestive of lupus, since early in his illness.

He is a pale, undernourished, poorly developed man with a husky voice. There are no palpa-

ble glands. There is a definite lag over the right chest. The percussion note is flat over the right base and breath sounds are greatly diminished. Over the left chest many sonorous rales are heard. The X-Ray study shows a marked thickening of the pleura at the right base. There is a partial pneumothorax on the right apparently an old empyema cavity. In the middle of the left lung there is infiltration, probably inflammatory in origin. The leucocytes are 17,000 with 80 per cent polys and hemoglobin 68 per cent.

On January 16, 1931 six ribs were resected, opening an empyema cavity the size of two fists. The pleura was thick and the walls of the cavity were fibrous. The patient improved and was dismissed February 19, 1931 with the wound granulating.

On February 24, 1931 he was readmitted after having spent about one week at home. He now complained of dyspnea which about 11 P. M. became so extreme that tracheotomy had to be done with the patient in bed. He was cyanotic and almost pulseless from some form of laryngeal obstruction. He improved at once after the operation which was done without anaesthesia. He did nicely until March 22, when he had a severe hemorrhage from the tracheotomy wound, although the tube was still in place. The bleeding was controlled by gauze packing around a new tube. He slowly improved until April 10, 1931 when he was dismissed with the tracheotomy tube in place and the empyema cavity slowly filling with granulation tissue.

May 10, 1931 he spent 10 days in the hospital under observation. Although a definite diagnosis could not be made of the laryngeal lesion as no growth was present there is every reason to believe that the skin lesion, the laryngeal lesion and the empyema were all tuberculous.

At the present time, April 1933, he still wears the tube. His voice is still somewhat impaired but the empyema is well and he is working as an automobile mechanic, to support his family.

#### *Case V.*

O. R., white, male, age 24, Ridgeville, S. C. admitted to Baptist Hospital July 16, 1932. T 102, P 90, R 20.

He had had a discharging sinus of the left

chest since operation 4 years ago elsewhere for empyema. Since then he has been weak, with fever off and on, with loss of appetite and inability to work.

Physical examination shows marked retraction of the left chest with no movement and diminished breath sounds. There is dullness with flatness at the base. There is lateral curvature of the spine. The fingers are clubbed. The leucocytes were 5900, with 52 per cent polys and hemoglobin 45 per cent.

July 18, 1932 the thoracotomy wound was enlarged and drainage established. Next day the temperature became normal and the patient remained without fever. August 1, 1932 a transfusion of 860 cc of whole blood was given and 4 ribs resected. A pedunculated muscle flap was sutured into the large empyema cavity.

The patient was dismissed Sept. 3, 1932 with the wound granulating. April 1933 he is at work, having gained 25 lbs. His wound has about healed.

#### Conclusions

Although chronic empyema is surgical failure to cure acute empyema it may itself be cured by surgery. Lung abscess and bronchiectasis are most often primary lesions which precede empyema. They are serious conditions and no case complicated by them is included in this series.

#### DISCUSSION

Dr. L. Emmett Madden, Columbia:

I have been extremely interested in this small group of cases presented by Dr. Bunch. These patients, as he pointed out, were hopeless invalids, some of whom had given up all hope of obtaining help. They present themselves to the surgeon, and any procedure that promises them any hope at all is worth considering. Some of them had been operated upon several times. They are told they are tuberculous and proceed to take the usual treatment of rest, forced feeding, etc., to get well. Some of them were told to get a bottle or football bladder and blow for a certain length of time every day, thus gradually obliterating the cavity. I doubt if by either of these methods they can be cured and returned to a useful occupation.

By thoracoplasty we are able to convert a cavity with thick walls and a large absorbing surface into an open, draining wound; and it is remarkable how much space can be obliterated by suturing a muscle flap into the wound. Unoperated, these cases undergo amyloid degeneration. When operated upon, while it may take months to return

to normal, they do so; and at the end of months they are able to lead a normal life.

I should also like to stress the value of taking smears or cultures prior to operation. Often a case of pleurisy with effusion will simulate the onset of pneumonia. These cases fail to get well. They have fluid in the chest. They are turned over to the surgeon; and the surgeon, without further investigation, will do a thoracotomy on a tuberculous empyema, which results in a chronic empyema with draining sinuses.

#### \*THE TUBERCULIN SKIN TEST

By *Hilla Sheriff, M.D., Spartanburg, S. C.*

Since 1890 when Koch announced his "cure" for tuberculosis much attention has been focused upon tuberculin. The therapeutic possibilities of this substance were exploited to the exclusion of its diagnostic uses until Von Pirquet brought forth in 1907 his cutaneous tuberculin test. At once several modifications of this test were introduced, namely, the conjunctival reaction of Woeff-Eisner and Calmette; the percutaneous test of Moro, and finally in 1908, the intracutaneous test of Mantoux. All of these tests have as their common basis the allergic response of individuals infected with the tubercle bacillus to the product of its growth. By numerous comparative studies it has been found that the intracutaneous method of Mantoux is more sensitive and has a reserve of strength not possessed by the Pirquet cutaneous or scratch test. Since undiluted tuberculin is generally used in the first instance for the Pirquet test, repetition with the same solution is the only means of procedure in case of doubt. In the intracutaneous method it is possible to use ten, a hundred, and if necessary, a thousand times the usual initial dose when retesting patients. The two tests differ in other respects besides sensitiveness. In the Pirquet reaction the volume entering the skin is variable and cannot be measured so that the quantitative use is limited. Even if two tests are made simultaneously a response may be obtained in one and not in the other, making a negative reaction unreliable. In contrast to the Pirquet test, the intracutaneous method affords an accurate means of administering a known quantity of tuberculin at a known depth

\*Read at the Regional Tuberculosis meeting, Spartanburg, S. C., May 24, 1933.

of the skin. It therefore can be used quantitatively in graded doses and the results compared with considerable accuracy. Because the Mantoux or intracutaneous test has so well stood the test of time, is the most sensitive and accurate one; it is more extensively used than any of the others. The technique of the intracutaneous test is fully described by Hart:

"Human old tuberculin of known potency according to the international standard should be used. Dilutions of 1:10,000, 1:1,000, 1:100 and 1:10 are prepared. They should not be used more than a fortnight after dilution. The diluent recommended is a 0.5 per cent phenol-saline solution. The front of the forearm or upper arm is cleansed with alcohol or ether before making the test and an injection of 0.1 cc of the dilution is made with the bevel of the needle upward. In making the injection the skin should be held taut with the left hand, the needle being inserted at the smallest angle possible until the bevel is just completely covered. In this way subcutaneous injection is avoided. The injection must raise a bleb, on the surface of which the hair follicles should be clearly visible. Control solutions are unnecessary as a routine when solutions of 1:100 or weaker dilutions are used but are advisable with 1:10 or more concentrated tuberculin in order to prevent confusion with delayed atypical non-specific reactions which follow these large doses with comparative frequency. The controls should consist of glycerinated veal peptone broth of the same strength and composition as that contained in the tuberculin and preferably obtained from the actual medium from which the particular sample of old tuberculin was obtained. Readings should be made at forty-eight and ninety-six hours, or if only one observation is possible, at seventy-two hours. The test should be recorded as positive or negative to the given dilution. A reaction should be regarded as positive if it consists of an area of erythema or erythematous infiltration the greatest diameter of which equals or exceeds 5 mm. If a control test is made, an area definitely greater than that on the control arm constitutes a positive reaction. Feeble positive reactions are liable to cause difficulty. Doubt may generally be removed by retesting with ten times the strength of tuberculin. This procedure should be carried out within a week of the prev-

ious test or else after an interval of several months on account of the possibility of sensitization causing a reaction. The initial injection should be 0.1 cc of 1:10,000 tuberculin. When, however, experience and confidence in the test have been gained, the initial dose may be 0.1 cc of 1:1,000 tuberculin except in patients (a) suspected of having bone, joint, ophthalmic or skin tuberculosis. (b) who have had a recent hemoptysis, or (c) who are home contacts of tuberculosis, and (d) in patients when attendance at further tests cannot be guaranteed. The weaker solution is less likely to produce discomfort or severe reactions than is 1:1,000 when given as the initial injection. The latter solution, however, gives a clearer reading and saves time. The initial concentration must never be greater than 1:1,000. All patients negative to a 1:10,000 dilution should be retested with a 1:1,000 dilution. A dose of 0.1 cc of 1:1,000 solution of tuberculin is in general sufficient for routine purposes. To make more certain, however, patients negative to this dose should where possible be retested with 0.1 cc of 1:100 tuberculin. This procedure should be carried out if there is the slightest doubt as to the diagnosis from the clinical standpoint, or if reduced reactivity is suspected. In such cases, if the patient is still negative, he should be further tested with 1:10 dilution. The latter is the practical upper limit because stronger solutions are difficult to inject, cause pain, rarely yield additional positives, and give atypical nonspecific reactions with comparative frequency. Retests are conveniently made at the time of reading the previous reactions."

One of the most valuable uses of the tuberculin test is as an aid to physicians in making an early diagnosis of the disease.

It is appalling that in 1930 there were 68,816 deaths in the United States from tuberculosis, and careful surveys have shown that there are nine times as many having the disease as there are deaths in a given community, and probably not more than one-third of these have been discovered.

The most essential factor in the control of tuberculosis is to discover the case in the early stage of the disease. This is the only stage which is usually curable, and it is the only stage which is usually not contagious. At pres-

ent the majority of cases of tuberculosis are not discovered early. By the time the patients reach the advanced stage they have most probably infected all those living in the home with them. This is especially true when they do not know they have the disease and when they have not been taking the necessary precautions to prevent spreading the infection. Studies have shown that 80-90 per cent of those living in homes of positive sputum cases give a positive tuberculin test, thus showing the presence in their bodies of the live tubercle bacilli. As long as such conditions prevail tuberculosis will continue to be a major cause of death.

In order for physicians to discover any large percentage of cases of tuberculosis in the early stage, it is going to be necessary for them to employ additional procedures to those generally in use. It is not enough to limit the study of patients to a careful history, a careful physical examination and repeated sputum examinations. It is not infrequently true that patients with early and occasionally moderately advanced tuberculosis have no symptoms of the disease, but also that no abnormal physical signs can be elicited in their chest, even by those especially trained in chest diagnosis.

Hope for improvement in the early discovery of tuberculosis depends on a more general use of the tuberculin test and of the X-ray for those having a positive reaction. A careful history and a careful physical are extremely important, but not sufficient. The tuberculin test is so harmless; it is so easily administered, the results so easily interpreted; and the information derived is of so much value, that it is altogether feasible that the test be given by the family physician to all children and adults exposed to open cases of tuberculosis and to all of those with suspicious symptoms or physical signs even though they are not known contacts.

A positive tuberculin test in most cases gives the patients the first tangible evidence of the danger of their infection. Many who would otherwise scoff at any suggestion that they need to be examined, will be sufficiently alarmed over a positive tuberculin test to want a most thorough examination made and to have it repeated as often as necessary. The visible proof, as evidenced by a positive tuberculin test, that they have infected other members of the family

will often cause patients with positive sputum who would otherwise persist in being careless to take the necessary precautions.

Tuberculin skin reactions have assumed tremendous importance in the diagnosis of childhood tuberculosis, constituting at present the most important single diagnostic method, and with the X-ray examination affording an excellent approach to the early diagnosis of tuberculous infection and disease.

The frequent absence of all symptoms of physical findings in the face of active tuberculosis in children is striking and especially true for hilum lymph-node and lung involvement. Chadwick, as a result of experience with a large series of cases states that examination of the chest is of little value except in advanced cases; that when rales are found in children, the condition is usually non tuberculous. In twenty cases of active pulmonary or hilum lymph-node disease, only four had physical signs referable to the lungs; two had rales; the other two had evidence of consolidation. Such symptoms as cough, night sweats, anorexia and fatigue could not be correlated with tuberculous disease in most instances. Apparently in children only the very severe or long-continued tuberculous infections have a definite influence on growth and nutrition.

The interpretation of the test varies at different ages. According to Dr. Hart the positive reaction has its chief chemical value in infancy, when, from direct observation, tuberculous infection is more likely than at other ages to be associated with or progress toward active disease terminating fatally. An infant under two years of age showing a positive reaction, but without symptoms, should be kept under observation for some years on account of the possible development of clinical tuberculosis. Meantime, the prognosis should be optimistic though guarded. If, however, obscure and persistent symptoms are present, a positive reaction should be regarded as important evidence but not proof that these are tuberculous in origin, and a serious view should be taken until time has shown this to be unwarranted. A positive reaction in a child, age two to five years with persistent symptoms should suggest that these are tuberculous in origin. In a patient over five years a positive reaction should not be

regarded as denoting clinical tuberculosis even in a suspicious case.

It is strongly recommended that physicians test routinely all infants and children who come from tuberculous homes, negative reactors being tested at six months intervals. In this way the physician will learn when infection has passed from the tuberculous mother to her children, and will be able to follow the subsequent history of these children more intelligently. In older contacts a negative reaction may be of help in excluding early pulmonary and tracheo bronchial tuberculosis, as well as tuberculous adenitis, all of which conditions are notoriously difficult to diagnose with certainty in school children. Opie advises that all school children giving strongly positive reactions to 1 in 10,000 tuberculin, should be subjected to an X-ray examination of chest on the chance of discovering grave lesions of the lungs and adjacent glands. The stronger the reaction is to higher dilutions of tuberculin, the more likely are grave lesions to be demonstrated radiographically even when no symptoms are present.

The greater use of the test together with observation of positive reactors over a number of years will, it is hoped, assist materially both in foretelling the ultimate fate of children infected at different ages and advising suitable precautionary or therapeutic measures before it is too late.

The small use that is made of the tuberculin test may be due to misconception of its value in the diagnosis of clinical tuberculosis. Thus, it is still commonly believed that the diagnostic application of the test are confined to early life, that so nearly all adults would give a positive reaction—that the test would be useless except in young children. This opinion was based upon surveys of the poorer classes in some of the large cities of Europe and America where living conditions were crowded and where from 60 per cent to 95 per cent of the adults had been infected, and such a large percentage of the tuberculin tests were positive. Since surveys have been made in rural sections and smaller cities where houses are separated by open space and where good ventilation and sunshine are abundant, the tuberculin test has proved very valuable in adults. Since a nega-

tive test will almost surely eliminate the probability of tuberculosis, and since a large proportion of those attending diagnostic clinics and consulting private physicians will be negative, is it not most feasible that this simple test be used to weed out those who are uninfected? Much valuable information can also be obtained from the degree of positive reaction. Mild reactions usually indicate slight infection; severe reaction usually indicates severe infection, and are much more common in those closely exposed to positive sputum cases. By no means have those with well marked reactions tuberculosis, but many of them have, and practically all of those who have clinical tuberculosis, even in the early stage, will give well marked reactions to tuberculin test.

By using the tuberculin test and by making X-ray of positive reactors, or even of strongly positive reactors in large groups, such as children and teachers in the schools, students in college, and employees in large industrial plants, many cases of early tuberculosis can be discovered. By extending the study to the homes of those who give strongly plus reactions and to those who are found to have early tuberculosis, many previously undiscovered cases of chronic advanced tuberculosis will be found. Such cases are often the most dangerous disseminators of infection because their range of contact is wider, and not being conscious of the nature of their trouble, they take no precautions against its spread.

In conclusion, let me summarize the tuberculin test has been found valuable:

1. As an aid to the physician in the diagnosis of tuberculosis in individual cases.
2. For detecting tuberculous infection in early childhood and for investigating its spread among the other members of the household.
3. In estimating the prognosis in cases of tuberculosis.
4. For ruling out tuberculous infection after repeated negative reactions.

The whole tendency to modern work is to concentrate on early diagnosis. In this aim the intradermal tuberculin test has undoubtedly a great part to play.

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#### RIDGE MEDICAL SOCIETY

The Ridge Medical Society had its regular biennial meeting the evening of the sixteenth of October. The attendance was larger than usual.

Among the visitors were Drs. Benj. Rubinowitz, J. H. McIntosh, W. B. Timmerman, T. A. Pitts and S. E. Harmon and F. M. Routh of Columbia, Dr. Howell, Superintendent of the Aiken County Hospital and Dr. P. Garvin of Ridge Spring.

Dr. Howell read an instructive paper on coronary disease which was freely discussed by several.

Dr. Frontis gave a detailed report of his recent affliction with it.

Dr. T. A. Pitts gave interesting report of his visit to the World's Fair and of the recent developments in X-Ray machines and their corresponding prices.

Dr. F. M. Routh made an interesting and instructive address on allergy, asthma and eczema, which elicited discussion, questions, etc.

Dr. S. E. Harmon gave a resume of the proposed plans for Federal Emergency Medical Relief for taking care of the indigent sick by reputable members of the medical profession.

The society voted unanimously its approval of the Federal Government's arrangements for paying the doctors for treating the indigent.

The society authorized the officers of the society to name the committees to represent the doctors.

Drs. D. B. Frontis, F. G. Asbill and O. P. Wise for Saluda County; Drs. A. L. Ballinger, W. W. King and R. H. Timmerman for Lexington County were selected.

Various other important business matters were considered.

Supper was served in the Rutland Hotel.

Dr. S. M. Pitts one of our oldest members who because of indisposition hasn't attended in sometime met with us.

Drs. Oxner and Brogden of New Brookland also attended.

The Ladies Auxiliary met with Mrs. W. W. King where they were delightfully entertained.

Owing to the absence of the President, Dr. K. L. Able, Dr. D. B. Frontis acted as President.

W. P. Timmerman, Secretary.  
Batesburg, S. C.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

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No. 11

In a recent number of *Tuberculosis Abstracts*, Dr. Esmond R. Long summarized the papers presented before the Pathological section at the annual meeting of the National Tuberculosis Association held in June, 1933. In this issue, Dr. Iago Galdston of New York renders a similar service by pointing out the high lights of the discussions of the Clinical section.

### CLINICAL PROGRESS IN TUBERCULOSIS

In reviewing the clinical material presented during the 29th Annual Meeting of the National Tuberculosis Association, one is deeply impressed with the fact that the "reaping" stage in tuberculosis progress is now passed and that we have entered upon what might be called the "gleaning" stage.

The advances which we have witnessed during recent years in tuberculosis are largely the result of careful combing of old territories, of critical evaluation and of more skilful application of techniques and procedures which in some instances have been known to us for several decades.

#### *Advances in Lung Surgery*

As an illustration of this, we may take the marked advance which has been made in the application of surgery in the treatment of pulmonary tuberculosis. Heretofore surgical treatment of tuberculosis of the lungs has been a rather rare procedure, applied only when other methods failed to produce the results desired. Nowadays surgery is as common as any other form of treatment and is used in conjunction with the rest. In some institutions, as many as 70 per cent of the patients are surgically treated.

The surgical procedure consist of pneumothorax, phrenicotomy, apicectomy, and thoracoplasty. Is it not illuminating that the oldest of these procedures, pneumothorax, was originally suggested by Forlanini in 1882, the very same year in which Robert Koch revealed the tuber-

cle bacillus? The other surgical procedures, with which the names of Sauerbruch, Archibald, Alexander, and others are associated are also of relatively long standing. These procedures have been known for years but only recently have we begun to apply them with any measure of frequency.

This more frequent and wider application of surgery to tuberculosis of the lungs is undoubtedly due to the general progress which has been made in the field of surgery. The improvements in X-ray technique, the wider choice of anesthetizing agents, and better general surgical technique render surgery in the treatment of tuberculosis of the lung comparatively safe and markedly effective.

#### *Tuberculosis among Negroes*

Progress in this field was reported by Dr. Henry D. Chadwick, *et al*, in a paper entitled "Collapse Therapy in Treatment of Pulmonary Tuberculosis in Negroes." This paper was based on a study of 464 Negroes having pulmonary tuberculosis who were hospitalized during the period from January, 1931, to September, 1932.

Treatment consisted of bed rest supplemented by collapse therapy procedures, which were used in 70 per cent of the cases. Of the patients discharged 28 per cent were arrested and 58 per cent died, but, including those who are still under treatment, favorable results were obtained in 53 per cent. This is an excellent record when we note that on admission 23 per cent were moderately advanced and 67 per cent far advanced, or 90 per cent had advanced beyond the minimal stage before treatment began.

#### *Tuberculosis among Indians*

A very solid proof of the effectiveness of the anti-tuberculosis measures now furthered by our tuberculosis societies was presented by Dr. R. G. Ferguson in his report on "The Indian Tuberculosis Problem and Some Preventive Measures." According to Dr. Ferguson, in 1931 there were 672 deaths from tuberculosis

among the Indian population of Canada. This number represents a tuberculosis death rate of 547 per 100,000, a rate seven-and-one-half times the average for the total population of Canada. By the application of standard anti-tuberculosis measures on the Qu'Appelle Indian Health Unit, it was possible to reduce the tuberculosis death rate of this group of Indians to approximately one-half of that rate for the Indian population of Saskatchewan.

#### *Fungous Infections*

Returning again to our original thesis, namely, that we have come to the "gleaning" stage of tuberculosis, we may use as a further illustration, the excellent contribution that was made by Dr. David T. Smith of Durham, North Carolina, on the "Diagnosis and Treatment of Common Fungous Infections of the Lungs."

For more than two thousand years, from the time of Hippocrates to the time of Laennec, physicians were at a loss to differentiate between true tuberculosis and those other morbid conditions of the lung which give clinical signs and symptoms closely resembling those of tuberculosis.

Laennec with his stethoscope and with his clinical description of the tuberculous process as shown in the cadaver of post mortem, singled out tuberculosis and separated it from other conditions. However, to this very day, we find tuberculosis confounded with other pathologic conditions and notably with fungous infections of the lung. The fungous infections of the respiratory tract represent a field in which

much study remains to be done. As Harry P. Jacobson so aptly says in his recently issued volume "Fungous Diseases—A Clinical Mycological Text:" "It is not at all extravagant to predict that the immediate future holds in reserve a respectable place for the science of mycology—a place commensurate with the importance of the clinical problems which the pathogenic vegetable fungi are known to cause."

On the diagnostic side of tuberculosis and related conditions of the chest, progress has been made in the field of bronchoscopy and in the wider and more skilful application of the X-ray. Dr. Louis Hamman's paper on "Malignancy of the Lungs and Pleura" and Dr. Kirklin's paper on "Roentgenologic Diagnosis of Mediastinal Lesions" dwelt upon this phase of the subject.

An extremely interesting contribution was presented by Dr. Leo Eloesser of San Francisco, California in his paper, "Bronchial Stenosis in Pulmonary Tuberculosis." This represents a phase of lung pathology which has not heretofore been much appreciated. Dr. Eloesser's paper, which was beautifully illustrated, made an impressive discourse on the subject.

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The papers of Doctors Chadwick, Hamman, and Eloesser will appear in forthcoming numbers of the *American Review of Tuberculosis*. Papers or abstracts of the papers of Doctors Smith, Ferguson, and Kirklin will be published in *Transactions of the National Tuberculosis Association*, 1933.

## SOUTH CAROLINIANA

J. I. Waring, M.D., Charleston, S. C.

In an interesting article, "Notes on the History of Public Health in South Carolina, 1670-1800," in the Proceedings of the South Carolina Historical Association (1932), St. Julien Childs says the following:

"Doctors, so-called, appear to have been quite plentiful in Charleston from the beginning. There were two with the first colony and there is record of more than a score who had been in the province before 1700\*. Thirty-six are mentioned by name in the weekly *South Carolina Gazette* from 1732 to 1738, inclusive. Probably some of these were plain quacks, others apothecaries or surgeons or men who had been apprenticed as such. Of *bona fide* physicians with university degrees, among the first known to have settled in South Carolina was Thomas Dale, M.D., of Leyden, who arrived about 1725. Later the province had a rather surprising number of distinguished medical men.

\*Woodward, Scrivener, John Thomas, Thomas and George Smith, Thomas Smyth, Bodett, Clark, Harris, Williams, Adams, Burnham, Hardy, La Bruce, Salmon, Porcher, Cordes, Guerard, Snow, Franklyn. Five of these were French Huguenots.

"The first mention of nurses is a casual one in 1704. It required little training to become a nurse in that day and they were probably represented from the beginning.

"The earliest reference I have seen to midwives is in a memorandum of 1746 complaining of their scarcity. Later they became more plentiful.

"The compounding of home remedies was a popular custom throughout the European world in the period we are examining, and probably nowhere more so than in this frontier land where the country people were usually far from the reach of any kind of 'doctor', and the existence of strange herbs and creatures tempted the curious to experiment.

"Of other influences affecting the health of

the community, it is probable that the extremely transient character of its population during the period prior to the Yamassee War (1715), together with the comings and goings of Indian traders, pirates and smugglers, meant the bringing in of many diseases. To the importation of negroes from Africa, the outbreaks of small-pox were often attributed. The frequent incursions of yellow fever were doubtless partly due to Charles Town's West Indian trade, and the fact that that city is today the only known focus in the United States of filariasis, a mosquito borne disease, may well be an inheritance from the extensive Barbadian immigration of colonial days, as Barbados has long been famous for this malady. To the notable increase of malaria in the country in the eighteenth century, the development of agriculture almost certainly contributed. Generous use of intoxicants, particularly West Indian rum, presumably did the people no good, and the persistence in the heavy meat diet popular in England must have had a good deal to do with the commonness of dysentery.

"To conclude, I think we may safely concur in an opinion expressed by Washington in 1796, that the state of health in South Carolina was below the average of contemporary English speaking communities in this country, a condition for which the prevalence of malaria appears to have been largely accountable. Knowledge of this fact, if such it be, seems to make more understandable a number of well-known features of South Carolina's early history, such as the relatively slow increase of her population, the general failure of small farmers in the coastal area, and the frequent pilgrimages of prosperous Carolinians to Europe."

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THE QUESTION OF ALLERGY. F. M. Routh, Columbia. Sou. M. & S. 95 Sept. 1933—473. A general discussion which emphasizes the necessity of recognizing allergic conditions by means of careful and repeated

testing. Constant supervision of allergic patients and search for non-allergic factors are considered important.

ATALECTASIS. W. A. Smith & H. Rudisill, Jr., Charleston. Sou. M. & S. 95 Sept. 1933-391. A review of the mechanical factors concerned in the development of pulmonary atelectasis, and of the pathologic conditions which might be causative.

INJURIES OF THE PANCREAS. D. Jennings, Bennettsville. Sou. M. & S. 95 Oct. 1933-540. Dr. Jennings discusses such injuries briefly, and reports two cases in detail.

TREATMENT OF THRUSH WITH BISMUTH VIOLET. J. I. Waring, Charleston. Sou. M. & S. 95 Oct. 1933-522. The author reports successful treatment of thrush infection with this dye manufactured in South Carolina.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "POSTOPERATIVE RUPTURE OF ABDOMINAL WOUNDS"

The postoperative rupture of an abdominal wound, while not common, occurs often enough to warrant our consideration. Upon a basis of fifteen cases in which this accident occurred, the subject is reviewed by Arnold Starr and L. H. Mason of Boston in Journal A.M.A. Vol. 100, Feb. 4, 1933.

Naturally the incidence decreases with the skill and care with which the abdominal incision is closed—However it occurs occasionally in the most competent hands. Apparently the actual mechanism is that the peritoneal closure is incomplete or insecure and that a piece of omentum forces its way into an opening—it becomes edematous and gradually wedges the incision open. If the process proceeds sufficiently far and rapidly, a rupture of the wound results. If it is not extensive and the superficial structures hold, it passes unnoticed at the time only to appear as an incisional hernia some months later. No doubt coughing, straining and vomiting are contributory factors, though in themselves they are inadequate to be held solely to account. In the same category is closing the peritoneum with the patient sufficiently relaxed, thus favoring the tearing out of the sutures before they are supported by the closure of the fascia.

Sepsis is an important factor. By destroying the fascia which is the main support, wound rupture or a later hernia is inevitable. Infection also rapidly destroys catgut, and it is well

known that for the first week the strength of the wound depends largely upon the holding power of its suture material.

Wound rupture may occur in any type of individual, but it is found most frequently where constitutional factors do not favor satisfactory healing. In this class are patients with advanced carcinoma, severe diabetes, long standing jaundice, severe nephritis and cachexia from any cause.

Treatment of the condition consists in resuturing the wound. Spinal anesthesia is by far preferable for this procedure. It gives perfect relaxation and avoids evisceration. Inhalation anesthesia is accompanied by too much straining and retching both before and after the closure. Also the patient has to be deeply anesthetized to permit satisfactory closure. Local infiltration does not give sufficient relaxation—also it is generally accompanied by straining on the part of the patient. It is difficult to recognize the layers of tissue on account of the edema and friability, thus they can not be sutured separately. A heavy non-absorbable suture should be placed through the full thickness of the abdominal wall at close intervals. It is preferable to have the omentum underneath the suture line; it is essential to see that no loop of bowel is caught between the stitches.

Strange to say, the mortality following this accident is very low. The incidence of incisional hernia is also low, except where there has been a frank infection.

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M. D., F. A. C. S., CHARLESTON, S. C.

### ACUTE AND CHRONIC OTITIS MEDIA

#### *Sinus Thrombosis and Petrosal Pyramid Suppuration*

Dr. S. J. Kepetzky, Arch. Otolaryn., Sept.,  
1933, p. 344.

In introducing his survey he truly says that the knowledge of the lesion is profoundly influenced by the tissue on which it develops; a self evident fact that has only slowly won recognition.

#### *Problems concerned with acute lesions:*

The degree of pneumatization that may occur in a mastoid must of necessity by a very valuable one, as every otologist realizes. Wittmaack's observations on the structure of the mastoid and of the pathological concepts occurring therein have been of great value to subsequent investigators.

There has to be enough inflammation occurring in the antrum of the child, to cause a fibrous barrier to form between the antrum and the yet embryonic mastoid cells. Anything less than that of course interferes less with mastoid pneumatization. In Roentgen examination of the mastoid comparisions are always made of the two mastoids. Steiner says that the structural changes are apt to be similar in both ears, he in 833 cases found the changes unilateral in only 10 per cent.

Everyone used to hold that once the cellular structure of the mastoid has been surgically exenterated cellular replacement cannot happen. Nevertheless Vess' case contradicts this. Cellular elements found in subsequent operation in the area of previous operation should not be looked on as "rests" which were overlooked at the original operation, but rather as the result of the subsequent evolution of cells.

Husik shows the connection between the type of bone present and the tendencies toward intracranial envolvments. Since a compact bone cannot coalesce, a coalescent mastoiditis is impossible when a sclerosed bone is present, but

an intracranial lesion is proportionately more probable.

The relation of otitis to systemic and general disease. The otitic lesion may be the irritator of some general systemic disease as sepsis or the cause of some organ involvement as of the lungs or kidneys. For instance, Kinney makes some interesting observations, instances of which we have all seen. In discussing the relationship of otitis to nephritis he differentiates two types of cases. 1. As of focal or embolic origin involving only a few glomeruli, presenting hematuria as the only significant symptom and eventually recovering. In 2 there is an acute hemorrhagic glomerulonephritis; with hematuria, albuminuria and high blood pressure; severe headache, edema and maybe uremia. If they survive the acute onset and the middle ear focus is eradicated the prognosis as to life is good.

Okonegi in 30 cases of acute nephritis among 387 cases of acute purulent otitis media noted "the rapid improvement in the condition of the kidneys after mastoidectomy." I saw an illustrative case of this years ago, before it was generally recognized. The child also had a metastasis in the arm. A simple mastoidectomy cleared it all up. But the arm abscess had to be opened. Kepetzky agrees with the truth of these observations.

Then there are systemic disorders in which are superimposed an otitic infection, as otitis occurring in diabetes. Vess by experiments proved that good results occur with early recognition, prompt eradication, and the control of the blood sugar content by systematic therapy.

As to the bacteriology Sekulic expresses a rather generally accepted opinion that the *Streptococcus mucosus-capsulatus* (pneumococcus type III) is the most potent bacteria in deceiving the otologist and in causing serious trouble. The loss of hearing is severe, but there is lack of membrane tympani redness, of pain and often solely on the presence of the

Streptococcus mucosus, irrespective of the clinical stage of the patient; the X-ray findings or the blood reactions to infection. But it seems best not to operate early but await walling off; if that is done meningitis may better be prevented.

Kadiura and Kopetzky seem to think that there are transitional forms between the Streptococcus haemolyticus, the Schottmuller type and the Streptococcus mucosus-capsulatus.

Influenzal Otitis. Kopetzky made a special report on this several years ago. He here reviews Tanturri's report, (which states that there is great hyperemia of the membrane tympani, only slight posterior superior sinking, with clinically marked pain and general symptoms of sepsis with chills. On paracentesis only slight discharge and little relief of symptoms) and says that with mastoidectomy there is rapid improvement, but I have found it often takes longer than 24 hours, which is the time he states for noting improvement. His pathologi-

cal findings in this type of mastoiditis are also in accord with these long ago recognized.

Yates reports the drainage of a purulent middle ear through the eustachian tube and Engel demonstrated by a radio opaque infection that there was a purulent tract from the mastoid to the peritonsillar area. I have seen a report of a case of petrous process suppuration rupturing in the naso-pharynx.

It was a formerly much discussed subject of the relation between infantile otitis and gastrointestinal disturbances, but there seems to be an acceptance of such a relationship. Operation on the ear is only indicated if a diagnosis of otitis is established.

The method that Heath of London used was in part adopted by Terrini, Caliceti, Berany and Attose; this method was to close the post auricular opening and drain through an opening made by removing the posterior wall of the external auditory canal.

## SOCIETY REPORTS

### PROCEEDINGS OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, WHICH WAS HELD AT ROPER HOSPITAL TUESDAY EVENING, OCTOBER 10th, 1933, at 8:30 O'CLOCK

The meeting was called to order by the President, Dr. D. L. Maguire.

Present: Doctors: Beach; Beckman; Bowers; A. J. Buist; A. J. Buist, Jr.; Cain; Cannon; Chamberlain; Deas; de Saussure; Heidt; F. B. Johnson; Lynch; McCrady; McInness; Maguire; Martin; Mazyck; Moore; O'Driscoll; F. R. Price; W. H. Price; Prioleau; J. J. Ravenel; R. B. Rhett; Rudisill; Rutledge; Sanders; Scott; W. A. Smith; W. H. Speissegger; Sughrue; E. W. Townsend; Whaley; I. R. Wilson; Robert Wilson; Robert Wilson, Jr. (38).

The minutes of the regular meeting of June 27th, and of the special meeting of August 26th, were read and confirmed.

The Secretary presented the applications of Dr. Matthew Steinberg and Dr. W. V. Branford, properly endorsed and containing initiation fees. The President directed that these be referred to the Board of Censors.

Under Reports of Officers and committees, Dr. Edward Rutledge presented the following resolutions of respect to Dr. Henry Perry Jackson,

which were adopted by a standing vote:

• Henry Perry Jackson, M. D., was born in Georgia of New England parentage January 24th, 1863, and died in Charleston, S. C. June 4th, 1933. In his early youth his family moved to Charleston and he continued his education in the College of Charleston. He received his medical education in the Medical College of the State of South Carolina, graduating in the class of 1897. After graduation he served as interne at the St. Francis Xavier Infirmary of this city. He began the practice of medicine in Charleston and continued his practice up until the day of his death. Dr. Jackson never married.

Dr. Jackson served his alma mater as demonstrator in histology, pathology and bacteriology from 1900 to 1904.

During the Spanish-American War Dr. Jackson was acting assistant surgeon stationed at Key West, Florida, later being transferred to the transport "Shinnecock." During the World War he served on the draft examining board.

Dr. Jackson was a member of the American Medical Association, the South Carolina Medical Association and the Medical Society of South Carolina, serving as president for the latter Society during the years 1929-30.

Dr. Jackson was untiring in his efforts to alle-

viate suffering, sparing neither time nor self, and no one ever appealed to him for help or advice in vain. To his friends he was loyal, sincere and without envy, always ready to advance their interests at the expense of his own. His genial nature endeared him to friends and patients alike. His death coming at the end of a full and gracious life, brought sorrow to all who knew him.

THEREFORE, be it Resolved:

1. That in the death of Henry Perry Jackson, M. D. this Society has lost a valued member from our profession;

2. That his services to his Country, his State and his City set an example which might well be emulated by other citizens to their advantage;

3. That he will always be remembered by his patients and friends for his modesty, his loyalty and his sincerity; and

4. That a blank space in the Minute Book of this Society be inscribed to his memory and a copy of these Preamble and Resolutions be sent to his family.

Robert Wilson  
Edward Rutledge  
R. S. Cathecart  
Committee.

October 10, 1933.

Under Miscellaneous Business, Dr. A. J. Buist directed the attention of the Society to a recent editorial in the American Medical Association Journal in regard to funds for medical relief for the unemployed and also to an editorial in the South Carolina Medical Journal discussing the same subject and suggesting that each Society appoint a committee to look into the matter. Dr. Buist felt that it was a matter of great impor-

tance to the Society and thought that efforts should be made to secure for the members such benefits as might be available. He made the following motion: Moved that the Committee on Public Health and Legislation be instructed to make themselves conversant with the editorials written in the recent medical journals, that they contact the proper authorities and report to the Society as soon as practicable the results of their investigation. This was seconded and carried. The President requested the committee to meet as soon as practicable and make a report at their earliest convenience.

The Scientific Program was called at 9:00 P. M.

Dr. O. B. Chamberlain exhibited a case of congenital syphilis presenting a real neurological syndrome. This was discussed by Dr. Edward Rutledge and Dr. F. B. Johnson.

Dr. Robert Wilson, Jr. read a short paper on "Fever of Syphilitic Origin." This was discussed by Dr. R. B. Rhett and Dr. Cannon, Dr. Wilson closing.

The President then introduced Dr. C. C. Applewhite, of the United States Public Health Service, who gave an able talk on "Syphilis in the Negro."

The President then introduced Dr. Walter Clark of the American Social Hygiene Association, who delivered an address on "Special Problems of Syphilis." These papers were discussed by Drs. Smith, Lynch, Deas, R. B. Rhett, Robert Wilson, and Cannon, Dr. Applewhite and Dr. Clark closing.

There being no further business, the meeting adjourned.

W. Atmar Smith, Secretary.

#### POSTGRADUATE COURSE

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## BOOK REVIEWS

SURGERY OF THE STOMACH AND DUODENUM, by J. Shelton Horsley, M.D., F.A.C.S., LL.D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. \$7.50. C. V. Mosby Co., St. Louis, Mo.

Dr. Horsley's large experience in gastrointestinal surgery makes him especially fitted for the contribution of an up-to-date book on the surgery of the stomach and duodenum. The increasing mortality from cancer of the stomach and the now well established opinion that the only cure for cancer of the stomach is early excision makes this work particularly timely.

The outstanding feature of this monograph is its usefulness for the general surgeon. The various operations are described in a clear, detailed manner, and sufficient illustrations are inserted so that the surgeon may have a clear picture of different steps in the operative procedure. There is maintained throughout an admirable balance between the usually more cautious viewpoint of the internist and the aggressive attitude of the surgeon. A brief historical sketch of the development of each type of operation furnishes a background for a better understanding of the rationale of the operation.

We believe that Dr. Horsley is entitled to the honor of being one of the first surgeons to emphasize the importance of maintaining a closer relationship between physiology and surgery. We venture to surmise that every important conclusion in this work has been carefully mulled over by the author as to its physiological rationality. Much of the chapter on the physiology of the stomach and duodenum is devoted to a consideration of the newer ideas of the nervous control of the gastro-intestinal tract. The contributions of Alvarez, Klein and Cannon are considered in some detail.

The chapter on "The Mimicry of the Symptoms of Peptic Ulcer" is very instructive; it should check the tendency of the clinician to consider a so-called cut and dried "ulcer story" as being the *sine qua non* of a peptic ulcer.

There is a full discussion of the question of medical versus surgical treatment of gastric ulcer. The author reasons that it is safer to treat such ulcers by excision because of the frequency of the development of malignant changes. Temporization with medical treatment should in no case be continued longer than a few weeks unless there is definite relief of symptoms as well as unmistakable roentgenologic evidence of healing.

The technique of intravenous administration of dextrose in Ringer's solution, which is considered so important in the preoperative preparation of the patient who is to undergo a stomach operation, is described minutely. The means of avoiding undesirable reactions are clearly indicated.

The preoperative administration of dilute hydrochloric acid by mouth to patients with anacidity as a means of reducing the bacterial content of the stomach and thereby preventing infection of the suture line is reasonable and seems to produce better results in operations on large, infected cancers of the stomach. This is an observation originating in Dr. Horsley's clinic and is one which has been overlooked, perhaps, by many surgeons who do stomach operations.

There are no rhetorical embellishments and few philosophical vagaries in the text. The style is simple and concise and, consequently, very readable. Repetition is minimal; it appears only to emphasize an important fact or procedure.

The fairness of the author is exemplified by his attitude toward his own "physiologic" pyloroplasty of which he says, "While the operation has a limited field, and while in my early enthusiasm, I applied it more widely than it should have been applied, it still had definite indications . . ." Further insight into his character is furnished in his unique dedication of the book, "To my colleague and rival, Stuart McGuire."

Dr. Horsley as many friends in South Carolina and his latest book should be well received as a timely and worthwhile addition to surgical literature.

The 136 illustrations are beautifully done by Miss Helen Lorraine. A work of art in medical book building has been achieved by the publishers, C. V. Mosby Co.

The contents by chapters:

I. Embryology, Anatomy and Physiology of the Stomach and Duodenum.

II. The Diagnosis of Lesions of the Stomach and Duodenum.

III. Peptic Ulcer of the Stomach and Duodenum.

IV. Cancer of the Stomach.

V. Preliminary Preparation, Anesthesia, Incisions and After-treatment for Operations on the Stomach and Duodenum.

VI. Operations for Congenital Pyloric Sten-

osis, Cardiospasm and Gastroptosis. Resection of the Gastric Branches of the Vagus Nerve.

VII. Operations for Hour-glass Contractions of the Stomach, Gastrotomy.

VIII. Pyloroplasty.

IX. Gastro-enterostomy.

X. Vicious Cycle, Jejunal or Gastrojejunal Ulcer. Disconnecting Gastro-enterostomy. Resection of the Jejunum. Estes Operation. Suturing the Colon.

XI. The Billroth I Type of Partial Gastrectomy.

XII. The Billroth II Type of Partial Gastrectomy. Total Gastrectomy.

XIII. Complications of Gastrectomy. Re-secting the Colon. Treatment of Metastases. Direct Operations for Gastric and Duodenal Ulcers and Perforations.

XIV. Duodenal Fistula. Duodenotomy. Duoden-Jejunostomy. Cholecystoduodenostomy. Choledochoduodenostomy, Excision of the Duodenum.

E.A.H., Jr.

### PSYCHOLOGY OF PROGRESSIVE DEAFNESS

Gordon Berry, Worcester, Mass. (*Journal A. M. A.*, Nov. 18, 1933), discusses the psychology of progressive deafness from the point of view of one who is himself hard of hearing. Under changes in behavior as deafness progresses he deals only with the behavior changes as deafness progresses through different ages (childhood, adolescence, young adult life, the prime of life and advanced years). Under adjustments he discusses mechanical and vocational measures, social adjustments and assurance. He states that impaired hearing may be an asset rather than a liability, as a handicapped laborer who knows a trade will tend to stick on the job and not leave in search of an easier and better paid task. Three assets may be mentioned: (1) deafness decreases distractions and increases concentration, (2) it fosters constructive thought, though unfortunately the person may not have the creative genius to respond and (3) it can and in some cases it does increase the interpretative capacity of the other senses. The author presents what he calls the nine commandments of the hard of hearing which try to epitomize the philosophy of that hard of hearing man or woman who endeavors to face and surmount his handicap.

### FUNDAMENTAL DIFFICULTIES IN TREATMENT OF PEPTIC ULCER

Walter Lincoln Palmer, Chicago (*Journal A. M. A.*, Nov. 18, 1933), presents evidence that shows that ulcer formation is dependent on the presence of acid gastric juice. The fundamental difficulty in therapy is conceived to

be that of protecting the lesion or the cells of the mucosa from the destructive effect of the acid. Mucin or some such substance may form a coating over the surface of the ulcer and thereby protect it from the attack of the acid, but satisfactory proof of this has not yet been produced. Mucin does not accomplish complete neutralization of the gastric free acidity. Atropine, in physiologic doses, decreases gastric secretion, but the attendant atropine effects seriously limit its usefulness. Gastro-enterostomy may or may not lower the acidity but rarely produces complete neutralization. Subtotal gastrectomy usually results in complete and permanent anacidity. The objections to its general adoption are the relatively high mortality rate and the gravity of the lesions when they do recur. Complete and continuous neutralization may be accomplished in many cases by the hourly milk and cream alkali regimen of Sippy. Frequently, however, it seems impossible to obtain satisfactory control of the free acidity even with large doses of alkali. In spite of this fact, conservative medical therapy based on the principle of acid neutralization remains the treatment of choice for uncomplicated peptic ulcer.

### FETAL MORTALITY IN THE TOXEMIAS OF PREGNANCY

C. H. Peckham, Baltimore, (*Journal A. M. A.*, Nov. 18, 1933), determined the fetal mortality in a series of 623 consecutive deliveries of patients suffering from the various toxemias of pregnancy and correlated such mortality rates with the clinical course of the toxemias. He observed that the prognosis for the child was good in cases of toxemic vomiting, provided the

pregnancy progressed to a period of viability for the child. However, in about half of the cases in this series the pregnancy terminated in abortion, usually spontaneous, and the total mortality percentage found was 53.85. The fetal mortality in eclampsia was 48 per cent. Higher mortality rates obtained in the Negro than in the white race. Advancing age and parity of the patient were attended with increasing risk to the child. Definite correlation was obtained between the mortality and the rising blood pressure (systolic, diastolic and pulse), the increasing albuminuria, the presence of casts in the urine and the amount of edema. In patients with marked deviation from the normal in the chemistry of the blood, the outlook for the child became poor. The later in pregnancy the toxemic signs developed, the better was the prognosis for the child. Conversely, in cases in which such signs developed before the child was viable the chances of its survival became extremely poor. The author believes that the great majority of such cases are nephritic in origin. Also, the risk to the fetus increased directly with the length of time elapsing between the onset of the toxemia and delivery. A high fetal mortality rate obtained with all the types of toxemia of pregnancy. The outlook of the child in cases of low reserve kidney, however, was not bad. It became more dubious in preeclampsia, and in chronic nephritis, including the mildest types, a total mortality percentage of more than 5 prevailed.

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#### THE VALUE OF PSYCHOANALYSIS AS A THERAPEUTIC PROCEDURE

Of their thirty-three cases, Leo Kessel and Harold Thomas Hyman, New York (*Journal A. M. A.*, Nov. 18, 1933), classify sixteen as failures. This group includes all the true psychotic patients and all the patients beyond the age of 40 at the time of their analysis. Seventeen of the patients were helped by psychoanalysis. In five instances the cure was specific. In the remaining patients the results were good

but not startling, and at times the result was not specific but due to modified circumstances. Despite the narrow therapeutic range and the limitations, restrictions and criticisms of the analytic method and its practitioners, it is the authors' belief that the freudian school offers the only intelligent approach toward the successful management of many psychiatric problems. In a broader sense, the newer teachings have widely influenced one's manner of thinking and one's approach to many of the problems that one meets in everyday practice. It is in dealing with the individual patient that disappointment is so keen and criticism so often in order. The support of the movement as a whole and the analyst as an individual has come for the most part from the public and a few enlightened internists, such as the senior author. Medical school faculties and neurologists, in particular, many of the larger hospitals and medical centers have been and in many instances still are openly hostile to psychoanalysis.

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## REPRINTS!

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PROVENCE, JARRARD  
AND MARTIN

Greenville, S. C.

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# Clinical on Dietary Control

## GINGIVITIS

1st year (standard diet), incidence . . . . .	<b>74.9%</b>
2nd year (standard diet + citrus fruit juices) . . . . .	<b>12.4%</b>
3rd year (standard diet, recheck period) . . . . .	<b>60.3%</b>

## DENTAL CARIES

1st year (standard diet), incidence . . . . .	<b>78.0%</b>
2nd year (standard diet + citrus fruit juices) . . . . .	<b>33.7%</b>
3rd year (standard diet, recheck period) . . . . .	<b>83.4%</b>

*Three and a half year study of 440 Mooseheart children by The Sprague Memorial Institute at the University of Chicago shows citrus fruit juices to be an important nutritional factor in the control of gingivitis and of dental caries*

DEFINITE progress in establishing the exact relationship between diet and dental disorders is reported in "Diet and Dental Health," a monograph soon to be published by University of Chicago Press.

Following one year each of clinical control and test periods and one and a half years of recheck, these conclusions were reached:

### Standard Diet Inadequate

"1. The average American diet is adequate in calories but appears to be deficient in certain substances that are requisite to dental health. This dietary deficiency may be the ultimate cause of much of the gingivitis, pyorrhea and dental caries with which we are afflicted.

"2. Gingivitis and dental caries can occur in the majority of a large group of children who are receiving a quart of milk, one and one-half ounces of butter, a pound of vegetables, half a pound of fruit and nearly one egg a day. These foods do not, therefore, contain substances that are specifically antagonistic to gingivitis or dental caries.

### Citrus Fruits Effective

"3. The addition of a pint of orange juice and the juice of one lemon to a diet that is nearly adequate in all other respects supplies something that leads to a disappearance of

most of the gingivitis and an arrest of about 50% of the dental caries.

### Three Ounces Not Enough

"4. Dental caries again becomes rampant and gingivitis redevelops in most of the cases when the citrus fruit intake is reduced to three ounces a day for one year. Three ounces is not enough.

"5. Children display a definite tendency toward the development of carious lesions which is nil or low in some cases and high in others. This tendency can, perhaps, be ascribed to heredity. The administration of an adequate amount of citrus fruit juice to a diet that is nearly adequate in other respects reduces the intensity of the carious process; but does not completely remove the effects of the inherent tendency in all cases.

### Growth Accelerated

"6. Orange and lemon juice contain something that acts as a growth stimulus to children."

### How Study Was Begun

The study culminating in these conclusions was undertaken after preliminary work by Dr. Milton T. Hanke, Associate Professor of Biochemistry in the Department of Pathology, and a member of The Sprague Memorial Insti-



# The Journal of the South Carolina Medical Association

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## Council Accepted

economical for vitamin A:

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### EDITORIAL

#### DR. J. T. TAYLOR RESIGNS FROM STATE BOARD OF MEDICAL EXAMINERS

We are glad to give space to the resolutions below and to add our commendation for the distinguished service rendered by Dr. Taylor to organized medicine in South Carolina in numerous capacities. For a long time Dr. Taylor was a member of the Council and served as Chairman of that body with marked ability.

Whereas the appointment of Dr. J. T. Taylor of Adams Run, S. C. to membership in the Sanitary and Drainage Commission for Charleston County makes necessary his resignation as a member of the State Board of Medical Examiners of South Carolina, and

Whereas the State Board of Medical Examiners of South Carolina desires to make permanent record of his service,

Therefore be it Resolved: That the members of this Board have received with keenest regret his resignation as a member and President, that we shall always remember with affectionate satisfaction our personal and professional association with him, his sterling qualities of integrity and

honesty, his high ethical standards, and his wise counsel on all of the complicated questions of this service.

Resolved that we congratulate the Medical Profession and the State of South Carolina for having had for so many years at their disposal the time and talents of so gifted a man and so splendid a citizen.

J. S. Matthews, President  
A. Earle Boozer, Secretary  
J. C. Caldwell  
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Frank Lander  
E. Marvin Dibble  
Geo. R. Wilkinson

Columbia, S. C.

November 28th, 1933.

### DEATH OF DR. R. E. HUGHES

Few members of the South Carolina Medical Association have taken a keener interest in organized medicine both at home and abroad than Ex-President R. E. Hughes of Laurens, who has just passed away. Dr. Hughes had been in poor health for several years, but he

carried on to the last as an able physician, an astute scholar, an interested worker in civic duties, and a leader of unusual ability. To those who met him at the recent Third District Association meeting as he welcomed the members and visitors to his home community it appeared that he had many years of usefulness ahead of him. His death brings great sorrow to his many friends both within and without the state, especially of the medical profession. Dr. Hughes was a genial character as he went about among his fellow men. He gave, perhaps, the best of his life to the promotion of the interests of the Medical Association of the Carolinas and Virginia which he served so admirably as Secretary for some two decades and at one time as President. He measured up to every demand of organized medicine in his own state, receiving the highest honors of the South Carolina Medical Association in being elected to the Presidency. Dr. Hughes was a great inspiration to the young men of the profession. He was well educated. He had high ideals, and he was an exemplar wherever he went as a cultured gentleman ready to extend a hand in many lines of endeavor.

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#### DEATH OF DR. W. C. BLACK

One of the outstanding pioneer surgeons of the Piedmont Section of this State some forty years ago was Dr. W. C. Black, Greenville. Dr. Black lived to be more than three score years and ten but in his passing the individualistic type of surgeon so well known about a half a century ago in the development of American surgery is recalled. Like many others Dr. Black went out into the homes long before hospitals were easily available and administered surgical relief to a multitude of patients. He was one of the first to own a private hospital. Dr. Black was courageous. He had a strong physique and he radiated optimism. In his earlier years particularly he was a familiar figure on the floor of the South Carolina Medical Association. He loved to enter into a dynamic discussion of gall bladder surgery or appendix surgery for instance. Along these lines he contributed to the literature from time to time as well as upon other phases of surgery. Dr. Black was greatly interested in organized

medicine, and he attended the meetings as long as his health permitted. He left an impress in the community in which he lived which will be remembered for a long time to come.

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#### COUNCIL ADOPTS RESOLUTION ON FEDERAL EMERGENCY RELIEF FOR INDIGENT SICK

Shortly after the Federal Bulletin, Number 7, was published, authorizing the President of the State Association to appoint an Advisory Committee, President Abell designated Dr. S. E. Harmon of Columbia, Chairman of the Council to act as Chairman of this Advisory Committee, the other two members being Dr. W. R. Wallace of Chester, and Dr. J. C. Buchanan of Winnboro. This committee began work immediately on a tentative fee schedule to be submitted to the Federal Relief Administrator and in turn to the County Medical Societies. The committee was unable to secure all the fees asked for with their first effort but finally came to a fairly satisfactory agreement and submitted the schedule to the constituent county societies. A number of the larger societies approved of the schedule as submitted but a considerable number of the smaller societies did not accept it. At the time it was found that the schedule compared favorably with some of the other states but on the other hand some states had a much higher schedule. Realizing the situation promptly, President Abell requested the Special Committee to ask for a rehearing with the State Administrator with a view to a higher fee schedule. As a result of this renewed effort a revised fee schedule was adopted by the committee and on December 13 presented to the Council of the State Association. The Council discussed the whole problem of Federal Emergency Relief for the indigent sick, viewing it from many angles. The Council was fully aware of the inadequacy of even the revised fee schedule to fully compensate the medical profession for the services rendered. On the other hand, the Council recognized that many medical men had been rendering this service, cheerfully it is true, at considerable outlay of time, energy, and money, and the government now steps in and offers for the first time to compensate the doctor in part at least for this serv-

ice. The Council recognized that this is a new venture in the practice of medicine, with many possibilities, but at the same time the government has requested organized medicine as is outlined in Bulletin, Number 7, to take over this service. If entered into in good faith, there is no reason why organized medicine may not shape the trends coming out of such an arrangement in a satisfactory direction. It must be kept in mind that this is a temporary emergency situation and that as soon as the emergency has been met these fee schedules are to be abolished. The Council adopted the following resolution: Resolved, That the Council approves the revised fee schedule as submitted by the Special Committee and the Federal Relief Administration and strongly recommends that all County Medical Societies accept it.

The officers of the State Association including the Council now believe that the spirit of this resolution should be carried out wholeheartedly in every constituent county medical society. It is to be clearly understood that the State Advisory Committee will continue in constant supervision over the administration of this new agreement with the government. This committee will endeavor to keep in continuous contact with the Federal Relief Administrator and apprise him of unsatisfactory working conditions as they arise and seek to bring about adjustments wherever required. It is highly important that each county society appoint at once a strong county advisory committee to function in the same way as does the State Advisory Committee. It is believed that, as time goes on, agreeable administration may be had of this new relationship. The President of the State Association has received many communications from all parts of the State in regard to this whole matter and desires the members of the State Association to know that he appreciates their many suggestions. He has been unable to reply to all the communications but will make every effort to promote the best interests of all parties concerned.

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#### 1933 IN RETROSPECT. FUTURE TRENDS

In medical circles in South Carolina as one travels about and observes, the impression is that while there may not have been any marked

improvement along any line there has been a steadily growing feeling of confidence and optimism. Here and there doctors admit that collections have been better than for several years which in turn is a reflection of better business conditions. In medical society matters the State meeting at Spartanburg set the pace for a continued keen interest in scientific programs. There has been no let up, or little at any rate, in this phase of medicine throughout all the years of the depression. The membership in some of the constituent societies has been kept up with difficulty to a full enrollment. Many physicians have had a hard time of it to pay their dues and meet their other expenses, and this has been reflected in medical society membership all over the country, but the falling off has been small, much less than was anticipated. All of the State Association activities have gone along fairly well, but it has been necessary to curtail expenses to a marked degree. Nearly all medical journals have had to economize space due to a decrease in advertising income. There has been no deterioration from any other standpoint as a rule. South Carolina is a fortunate state in that it has one of the finest systems of roads anywhere in the world. This enables all the officers of the State Association to travel over the State frequently, thus meeting with constituent societies which in turn lends inspiration both to the officers and to the membership. Many of the ominous problems such as state medicine, contract practice, and hospitalization schemes, have not as yet been a serious menace to us. For the most part the South Carolina doctor goes along the even tenor of his way very much of an individualist and yet ready to cooperate when called upon to do so. We have noted a remarkable output from the pens of South Carolina doctors in the great medical journals of the country. If one glances over the admirable department of our Journal known as Caroliniana this fact is self evident.

We are going forward into 1934 with great confidence that we are on the upgrade from every standpoint. That there are marked changes in medicine in the offing is admitted. It may be that specialism has reach its zenith and is on the decline. It is possible that the general practitioner may look forward to a re-

stored prosperity. It is difficult to explain the fact that thousands more students knock at the doors of medical schools for admission than the demand necessitates. This would seem to be a pressing problem of the future if the over-crowding of the profession is to be checked. No one seems to know how to influence these young men to turn their attention to other fields than medicine. It would appear then to be the duty of every doctor as he comes in contact with a prospective student of medicine to explain to him carefully the decreasing emoluments medical men may expect in the near future. Such a concerted effort on the part of the entire medical profession of America would be the most feasible plan to solve this pressing problem. The Medical Schools cannot do it and the colleges and universities from which these young men

graduate are not in position to do much about it. So the profession itself should take the matter in hand.

There is a trend for many public health administrations to be turned back to the profession with some financial reward for such practice. This is in line with the latest conclusions as to the simplest and most effective way to reach the individual as the doctor comes in contact with him.

Finally, we go into 1934 believing that the medical profession of America is better organized than it ever has been, and that there is a determination to stand together for the protection of the health of the people on a sane basis and for the preservation of the high ideals of the profession itself.

## ORIGINAL ARTICLES

## CATARACT

By I. Jenkins Mikell, M.D., Columbia, S. C.

Cataract has been recognized and operated for since pre-historic times. The ancient Babylonian physicians depressed the opaque lens by means of a bronze needle. The fee for such an operation being regulated by law and graduated according to the social status of the patient. No doubt this operation was performed long before this, long before the advent of bronze or other metallic instruments, by means of thorns or sharp sticks. The depression of cataract was done by the ancient Hindu physicians in India many centuries before Christ. Surgical skill and instrumentation reached a very high degree of perfection amongst these ancient Hindu physicians and there is no doubt but that a large portion of the knowledge exhibited by the later Greek and Roman physicians was obtained from this source. In India the depression of cataract has remained popular to the present time, being extensively practiced by itinerant native physicians.

Cataract was well known to the ancient Greek and Roman physicians but was known as glaucoma at this time because of the grey appearance of the pupil. These ancients also knew and performed an operation for cataract which was essentially the same as was done by the Indians.

These ancient Greek and Roman physicians, although recognizing and correcting the condition held an erroneous conception as to the nature of the disease. This error originated quite naturally from the views held as to the function of the lens. They thinking that the lens was the true seat of vision and knowing that when the cataract, or opacity, was removed from the pupil that vision was not destroyed, but on the contrary, restored, could not consistently regard the opacity as being located within the lens. They thought the opacity that they depressed into the vitreous was situated

in front of the lens and came from a pouring out of an opaque liquid between the iris and lens. Since this liquid was thought to fall from above down, the name cataract came into general use during the middle ages and probably because of the lack of a better term remains in general use today.

Our knowledge as to the true nature of cataract dates from the beginning of the last century, although Rolfink, who was doing two dissections a year at Jena, demonstrated the true condition in 1656. And later in 1705 Brisseau, a French surgeon, performed an autopsy upon a soldier who had a mature cataract. He depressed the cataract into the vitreous and upon opening the eye found the opacity which he had depressed to be the lens. The French Academy before whom he appeared with his findings and conclusions confuted him with the doctrines of Galen and it was not until three years later upon presentation of new proofs that the new doctrine was recognized.

Surgery, including obstetrics and ophthalmology, reached a degree of perfection under the Greek and Romans that it was not to attain again until the sixteenth century during the time of Ambroise Pare (1575). Celsus during the time of Tiberius Caesar wrote a medical work consisting of eight volumes. The first four dealing with diseases treated by diet and regimen, the last four with those amenable to drugs and surgery. The sixth volume treats of skin and venereal diseases as well as those of the eye, ear, nose, throat and mouth. Although surgery reached a high degree of perfection at this time the operation for cataract remained essentially the same as that performed for centuries before. Celsus' method being to depress the lens by means of a suitable needle (depresso cataracta). In fact this was the only operation with minor variations as to the method used to bring about the same results that was used up until the middle of the eighteenth century. These various methods were different in technic only, some entering the eye through the cornea and some through the

seclera behind the iris and in front of the lens, some dislocated the lens behind the iris into the vitreous and some merely rotated the lens on its horizontal axis. These methods of operating continued with no improvements throughout the middle ages, being known by various names such as couching, reclinatio and depression.

There is something attractive about this quickly and easily performed operation that is very appealing. It restores vision at once and apparently needs no after treatment. It was performed mainly by itinerant couchers throughout the middle ages. These cataract couchers were supposedly special physicians and were designated as such. During the course of time this branch of surgery came under the scope of the general surgeon and it is not until comparatively recent times that ophthalmic surgery has become a distinct entity in itself. These cataract prickers went from one fair to another, operated, collected their fee and moved on to more fertile territory. The patient was not seen again and it is probably well for the operator that he was not, because the later consequences were as often melancholic as the immediate results were brilliant. At least forty percent or more of the eyes operated were lost, either because of inflammation or because of an increase in tension. The inflammation coming both from infection and also from the dislocated lens acting as an intraocular foreign body, and very often the capsule was ruptured causing all the complications of a traumatic cataract. Frequently the other eye was lost through sympathetic ophthalmia. George Bartisch (1535-1606) a German court oculist published a book of pictures, the striking illustrations of which give us a complete purview of Renaissance eye surgery. Among the pictures may be mentioned those showing the patient tied in a chair and ready for operation, the modes of procedure in cataract, and the use of stenopeic spectacles for strabismus. Although Bartisch was an unlettered barber-surgeon, and undoubtedly employed a hired scribe to polish his writings for him, his work did much to lift ophthalmology above what he called the "Couchers and Eye Destroyers" of his time. However, it is doubtful that the high percentage of failures could be materially re-

duced even though the same procedure was carried out aseptically today.

Occasionally the lens would rise in the vitreous and subluxate into the anterior chamber. The first important improvement in cataract surgery came about probably through this accident. Daviel, a Frenchman, removed several of these subluxated lenses by making an incision through the cornea. In 1745 he undertook to operate a cataract which was situated in its normal position by making a semi-circular opening through the cornea. He published his findings in 1752; this was his only literary production, and was the report of a hundred successful operations out of one hundred and fifteen. By 1756 he had four hundred and thirty-four cases with only fifty failures. This was the first forward step and really inaugurated a new era in the history of cataract surgery. Since from that time the extraction of cataract began to be more extensively done than depression, finally superceding it entirely. Daviel's method soon came into general use although it naturally needed much improvement. There was no improvement until Beer invented a knife about 1813. This knife broadened from point to handle so that the blade is wedge shape. By this knife it was possible to get a perfectly horizontal and regular section through the cornea by simply pushing the knife on through after the point had entered the anterior chamber. Beer's method was to make the section, open the capsule and express the lens without an iridectomy. This procedure was soon generally adopted and a successful operation gave ideal results with a round, black, freely movable pupil. But the percentage of failures was still very high. These failures ran about fifteen to twenty percent and were caused by suppuration of the cornea. These old physicians not knowing that the suppuration was caused by infection, laid the blame upon the knife and the method used. Therefore, better procedures were sought. It was not until 1865 that Albrecht Von Graefe of Berlin, the creator of modern eye surgery and one of the greatest surgeons of all times, modified the method of making a section by means of a lancelike knife. A year before this he had introduced the procedure of iridectomy for inflammatory conditions of the eye, including glaucoma. The

lancelike knife did not prove very successful so he soon devised a narrow linear knife which is the same type that is in general use today, as is his form of corneal section. Von Graefe combined the linear section with the new procedure of iridectomy. This was almost a necessity because of the peripheral nature of the corneal wound allowing prolapse and incarceration of the iris. This was known as modified linear extraction, it is still known today as modified or combined extraction. Although Von Graefe called his method modified linear extraction it was really not a linear extraction as is known today or as was done by Daviel. Daviel's method being to break up the lens and expel the residue by means of pressure and the use of a special scoop or spoon devised by him. This being the linear extraction as is known today and is identically the same procedure as is carried out for traumatic and congenital cataracts. Von Graefe's method differed from this not only in the manner of making the section but also in the manner of removing the lens. He made the sections performed an iridectomy and after opening the anterior lens' capsule expelled the nucleus as a whole with no attempt to break it up. This is the universally used combined extraction of today. This method soon came to be widely used and was certainly more successful in the hands of Von Graefe than any other previously used method. But it too had its draw backs, the chief one being the high degree of surgical skill necessary to make the section properly. Many eyes were still lost through irido-cyclitis and many cases of sympathetic ophthalmia developed. These being caused by injuries to the ciliary body and incarceration of the lips of the iris wound. However, the number of post operative infections decreased remarkably, probably because of the location of the section immediately at the vascular limbus. It has been said that the percentage of infected cases under Von Graefe's hands was only about two to four percent. This in itself is remarkable when one considers that this was before the time of aseptic surgery. Because of the skill necessary and because of the above named complications Von Graefe's section fell into disrepute until the advent of aseptic surgery by Lord Lister in 1867.

It was during Von Graefe's time, namely in 1851, that Helmholtz introduced the ophthalmoscope. Helmholtz was a master of physiology, holding the chair of physiology and pathology at Konigsberg (1849), the chair of anatomy and physiology at Bonn (1855-1858), the chair of physiology at Heidelberg (1858-1871), and the chair of physics at Berlin (1871-1894). When Helmholtz discovered the ophthalmoscope Graefe exclaimed, "Helmholtz has opened a new world to us." The introduction of the ophthalmoscope was not only the greatest single event in the advancement of ophthalmology but was of great value to medicine in general. Its importance in ophthalmic surgery lies mainly in doing away with the old black cataract which was usually blindness caused by some fundus condition and not by a transparent normal lens that gave the appearance of a black pupil or black cataract.

It was during the time of Helmholtz and Graefe that Cornelius Donders, a Dutchman, who was also a famous physiologist, first describe the aphasic eye. He also described astigmatism, hypermetropia, myopia, and other refractive anomalies. He was the first to ascribe strabismus to an anomaly of refraction. In 1864 his book "The Anomalies of Refraction and Accommodation" was published in English. This was and still remains a classic ranking with the labors of Helmholtz.

Donders is mentioned here with Von Graefe and Helmholtz chiefly because of his work in refraction. Previous to this time very little was known of astigmatism or the use of cylindrical lenses. Without the proper refractions, which practically always entails the use of a compound lens, even the most perfect operation could not restore any great percentage of visual acuity.

Indeed, it may be said that it was through the labors of these three men, Helmholtz, Von Graefe and Donders that ophthalmology and eye surgery, as such, was put upon a scientific basis.

The two events that were mainly responsible for making a more or less exact science of the art of surgery were: the discovery and use of general anesthetics and the advent of asepsis. It is difficult to say which was of the greatest importance but sufficient to say that without

the use of general anesthetics the doctrines as laid down by Lord Lister in 1867 could never have been followed. The introduction of asepsis in affecting and changing the entire course of surgery very naturally had its influence upon surgery of the eye but probably was of less importance in this branch of surgery than in any other. As has been stated previously, during the middle ages, forty percent or more of the eyes operated upon were lost. This was caused chiefly by non-suppurative inflammation caused by the procedure used and even if done aseptically today would probably not materially lower the percentage. After Daviel's improvement ten to fifteen percent were lost through the same cause, this remarkable decrease being brought about because of expelling or expressing as much as possible of the lens substance rather than depressing it into the vitreous. After the introduction of a different location and method of performing the corneal section by Graefe, the percentage fell to two to four percent. This was before the era of asepsis and compared very favorably with conditions as found today where even in the best run clinics and hospitals where every conceivable aseptic precaution is taken the percentage of losses through infection runs about one-half of one to one percent. This certainly speaks more eloquently for the remarkable resistive power of the eye to surgical or other insults than it does for asepsis.

The introduction of anesthesia did not materially affect ophthalmic surgery, that is cataract surgery, until 1884 at which time Carl Koller used cocaine in a cataract extraction. Chloroform had been used for this purpose sometime previous to this and was certainly better than no anesthetic. But in cataract surgery in order to obtain the best possible results it is absolutely imperative that the patient be able to understand and follow orders which he cannot do if he is under the influence of a general anesthetic or suffers any pain. In other words the better the cooperation on the part of the patient the greater the chances for a successful operation. This cooperation is lost under a general anesthetic; and to the writer, even in patients with the best preoperative intentions and strongest wills, no anesthesia means no co-operation. This is easily understood by anyone

who has had a cinder or other foreign body in his eye. The chances are that Graefe lost far more eyes through complications arising because of patients being unable to cooperate than he did through infections.

It is seen from the foregoing that cataract surgery did not undergo any slow evolution in reaching its present state. It is more or less sharply divided into ancient and modern states; or better still, cataract surgery as was done before and as was done after the advent of Daviel and Von Graefe. Since Von Graefe there have been many minor changes mainly dealing with methods of extracting the lens after performing the same section as was introduced by him, and mainly having to do with various means of extracting the lens in its intact capsule. The details and differences of these procedures being too technical for a paper of this nature, but sufficient to say, that regardless of which one of the many comparatively new various intracapsular techniques used, the vast majority of the operations end in the same procedure as was introduced by Graefe.

In conclusion: from the foregoing statements one will readily agree with the writer that in this branch of surgery the only important, and really basic, improvement since the time of Graefe, has been the discovery and use of cocaine.

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#### TREATMENT OF TRAUMATIC TETANUS WITH REPORT OF SIX CASES

Charles O. Bates, M.D., F.A.C.S.,  
Greenville, S. C.

Before going into the treatment of tetanus, I wish to mention some of the important facts about this condition. There are four diseases which are very similar: shingles, rabies, tetanus and acute poliomyelitis. The toxins of these diseases are alike in their selective influence upon the nerve tissue. The mortality rate of tetanus is variously given. In some of

the most recent statistics the rate has been placed at 85 per cent after convulsions have begun, and 95 per cent where convulsions begin within ten days from the time of the injury. The mortality rate, will of course, be lowered when the symptoms come on after ten days and when the wound is on the extremities.

The cause of death in tetanus is exhaustion or cardiac failure due to long-continued or severe clonic convulsions or respiratory failure due to spasm of the glottis or diaphragm. Calvin and Goldberg, Chicago, state that the mortality from tetanus at the Cook County Hospital has not decreased in the past fifteen years in spite of the fact that in the last five years larger amounts of antitoxin were used and it was given intraspinally more often. A large number of cases occurred between the ages of ten and fifteen years. Tetanus was five times as common in males. Tetanus following gunshot wounds had a high mortality rate of 95 per cent. The incubation period in 56 per cent was under ten days. The mortality at Cook County Hospital of cases under ten days was found to be 84 per cent.

The treatment of tetanus is difficult because it is not known the patient has tetanus until it has reached his spinal cord and manifested itself by muscular spasm. It is for this reason that a planned, vigorous treatment must be carried out in all cases early; do not defer more active measures until the symptoms become more severe. Every case of tetanus is serious enough to receive the most vigorous treatment and be prepared to institute it at once. We are not treating a disease which we treat symptomatically.

The treatment resolves itself into (1) neutralization of the toxins present; (2) relaxation of muscular spasm as near as possible; (3) prevention of absorption of toxin.

### 1. Neutralization of Toxin

In my opinion the toxin already found should be met with a sufficient amount of antitoxin intraspinally and intramuscularly, but not intravenously. My reason for not giving it intravenously is because of the shock and prostration to an already weak and tired patient due to anaphylaxis. During the war no case of tetanus in France recovered if treated by the

intravenous route only. The intraspinal administration is less often followed by anaphylaxis. All patients should be tested for anaphylaxis and if there is any reaction they should be desensitized. This can be accomplished by this simple method: (1) Take 5 c. c. of serum, dilute with 50 c. c. of normal saline, inject 1 c. c. of the mixture intravenously; four or five minutes later inject 3 c. c.; five minutes later 10 c. c. are given and then 25 c. c. of the mixture can be given. After a further delay of fifteen minutes the serum can be given intraspinally or intramuscularly. Another point to be remembered about the administration of serum is that it may be forty-eight hours before all the serum is absorbed when given subcutaneously, whereas when given intramuscularly it is absorbed within twelve hours. While I am discussing antitoxin there is one thing that should be mentioned concerning its use in the prevention of tetanus. The French found that the period of immunity produced by antitoxin lessened with each succeeding dose. After the first immunizing dose they found it to be good for twenty-one days; after the second dose, seven or eight days; and after a third dose, even a shorter time. Therefore in an old case of gunshot wound, they gave the patient 15,000 units two days before performing a secondary operation lest the operation activate some dormant bacilli. The amount of antitoxin I have used in this series of cases has been 7,500 units concentrated intraspinally, 40,000 subcutaneously, or better still, intramuscularly, this serum all to be given the day I see the patient. I have not used larger doses because I felt these were sufficient. I have not repeated my antitoxin because I think that to give many large doses over a considerable period invites the anaphylaxis reaction. When I began the series it was at the suggestion of my partner, Dr. C. B. Earle, that I began the combined use of carbolic acid and serum. I have found since that the French have used the combination of serotherapy and carbolic acid. In what manner the carbolic acid acts, I do not know any more than the physician knew how quinine acted before he knew the cause of malaria. I am convinced that carbolic acid has a curative action on tetanus if the patient is treated early enough to get the effect of the

treatment. The method of treatment is to inject a 2 or 3 percent solution of carbolic acid in the amount of 1 to 5 grains in twenty-four hours, preferably to be given twice a day, the first dose to be injected around the wound, and if it is on the extremity, to inject up along in the region of the nerve trunks. The dosage of carbolic can be increased daily the urine being watched twice daily for a smoky cloud. As soon as the urine becomes dark and smoky in appearance, stop the carbolic acid.

### *2. Relaxation of Muscle Spasm*

Protecting the patient from external stimuli needs consideration; that grand jumble of being admitted to the hospital should be smoothed out a bit. There is no danger of tetanus to the other patients, but the other patients are a great danger to the patient with tetanus. He should have a quiet room and if possible a quiet nurse.

I have not used morphia in this series of cases to control the spasm completely and large quantities of morphine certainly will not help the patient. I have used sodium amyntal for these cases and find it has worked well toward relieving the patients of that horrible anxiety they all have. The patients have all been conscious the entire time during their illness. I kept them under the influence of sodium amyntal for weeks without any bad effects on the kidneys, and with no excitable or delirious effects.

### *3. Prevention of Absorption of Toxin From Wound*

This was accomplished by the application of pure carbolic acid in the wound if it had not healed, and the injection of a 2 per cent carbolic solution around the wound. I do not believe it is wise to be continuously probing or treating the wound because excitement of some dormant bacilli by such practice may occur. The fluid balance of the body must be kept up. This can be done by protoclysis of soda saline solution, or intravenous glucose 10 per cent, when the patient has much trouble swallowing.

Polloni gives a survey in April 1931 of a twelve-year period in Rome. Eliminating the fulminating cases, he had 53 cases treated with carbolic acid alone with a mortality of 30 per cent.

### *Case Reports*

Case 1. G. O., Chart No. 2491, City Hospital. Referred by Dr. H., boy, aged fifteen. Admitted to hospital November 26, 1929.

History of Injury: Cut his hand with rusty axe which had been lying in the yard. Treatment of wound consisted of washing the hand and then putting iodine in wound. The wound was dressed by a member of the family until it healed. This injury occurred three weeks before patient was admitted to hospital. Three days before admittance to hospital patient complained of cramps in the neck, back and shoulders; also had some pain on swallowing. Dr. H. was called and patient was sent to hospital November 26, 1929.

Examination at hospital revealed a boy fifteen years old, under nourished, anemic, unable to visualize throat, a spastic smile (*risus sardonicus*), opisthotonus, marked rigidity of abdominal muscles, exaggerated knee jerk, perfectly conscious, but talked with some difficulty due to inability to use muscles of mouth. Temperature on admittance 101 degrees F., pulse 136, respirations 34, blood count 9950.

Course: On the following day this picture changed considerably; there were definite convulsions with marked general muscular spasm, voiding involuntarily, very restless, least noise caused convulsions. Patient's chief complaint was pain in the back. A very sick and restless patient.

On November 29, temperature, pulse and respiration began to come down, but patient developed pain in chest and cough. Still unable to take much fluid.

December 3, temperature, pulse and respiration about normal. Muscular spasm and pain about the same.

December 7, up in chair, still has spasm in muscles of back, on a soft diet. Discharged December 16, after twenty-one days in hospital; patient can walk with the aid of someone helping him.

Examination in office a month later all muscle spasm gone.

Case 2. M. H., File No. 1977, 1930. Referred by Dr. D. Girl, aged nine years. Admitted to hospital September 1, 1930.

History of injury: Patient stuck splinter in foot August 27, in chicken yard, just four days

before being admitted to hospital. Wound was treated by mother who was a very sensible woman and a graduate nurse. Wound healing nicely. On August 31, ate breakfast with difficulty. September 1, patient still complaining of inability to open mouth quickly; had pain in neck twice that day. Dr. D. called, patient brought to hospital on night of September 1, walked into hospital; was able to open mouth, but was very slow in doing it.

Examination showed no exaggeration of reflexes, no great amount of stiffness of neck muscles. Patient was put to bed and no treatment given (a mistake). Temperature 99 degrees F., pulse 88, respiration 20.

Course: At 6 A. M., patient had slight convulsion followed by pain in neck and back. Unable to open mouth. Blood count 11,700, polymorphonuclears 73 per cent. Urine negative, marked opisthotonus, spastic smile, light phobia, marked exaggerated knee jerks, a very restless and uncomfortable child.

Treatment was begun four hours later than it should have been. September 3, temperature 102 degrees F., pulse 90, respiration 38. Fluids given by proctoclysis, 5 ounces every four hours. Patient in spasm most of time, spasm lasting for two minutes.

September 5, pain in chest, spasm lasting one minute. Unable to get anything but milk and water between teeth.

September 7, pain in chest and back, convolution lasting about one minute, unable to open mouth.

September 8, temperature 102 degrees F., pulse 108, respiration 28. Pain in back and chest. Still very rigid spine.

September 10, temperature 103 degrees F., pulse 116, respiration 26.

September 12, temperature 100 degrees F., pulse 108, respiration 30. Carbolic acid discontinued because of deep smoky urine.

September 15, temperature, pulse, respiration about normal. Patient much more comfortable and up in chair.

September 16, patient comfortable, but still unable to bend her back or open mouth one-half inch. Temperature 98 degrees F., pulse 80, respiration 20.

Patient discharged on the sixteenth hospital day to go home. Patient still not able to walk.

A month later office examination failed to reveal any evidence of muscle spasm.

Case III. R. W. File No. 2397, 1930, City Hospital. Referred by Dr. K. Boy aged sixteen years. Admitted to City Hospital October 30, 1930.

History of injury: Shot his hand with a blank cartridge, causing burn in the palm of hand. Seven days later he noticed some stiffness in muscles of jaws while he was at dinner. This soreness gradually became worse and he was admitted to the hospital October 30, nine days after the accident and two days after the first discomfort was noticed in the muscles of his jaw.

Examination: On admittance to hospital we found a boy sixteen years old, well nourished. He has a powder burn of the hand and some swelling. Also he has a vaccination for smallpox that was ten days old and causing no trouble. The boy complained of soreness of the muscles of the jaw. Temperature 100.8 degrees F., pulse 94, respiration 22. Blood count 11,600, 78 per cent polymorphonuclears.

Course: That night his temperature was 103 degrees F., pulse 120, respiration 28. Patient complaining of stiffness of arms and very restless.

On October 31, patient very uncomfortable, photophobia, back muscles rigid, headache, general body stiffness, exaggerated knee reflexes. Temperature 103.6 degrees F., pulse 110, respiration 6. Spastic smile, marked opisthotonus.

November 1 and 2: No improvement.

November 3: Slight improvement, but still unable to take much fluid.

November 5: Patient still very uncomfortable, complaining of pain in back and neck, but temperature, pulse and respiration very nearly normal.

November 7: Still has great pain in back and slight spasms. Carbolic acid discontinued because of very dark, cloudy urine which showed a shower of casts.

November 9: Still suffering with back and neck and some spasms. Very rigid body.

November 10: Much more comfortable. Sodium amyta, which had been given the patient daily, discontinued.

November 12: Much better; some stiffness.

November 13: Carried before the hospital staff in rolling chair.

November 14: Discharged. Still has some limitation of motion due to disfunction of affected muscles.

This patient did get 1/8 grain of morphine on his first night in hospital, but no more. His urine cleared within a few days.

Case IV. E. B. File No. 1147, City Hospital, 1931. Aged eleven, admitted to hospital June 4, 1931.

History of Injury: On May 26, stepped on rusty wire in barn. Nothing was done that night. The next morning it was washed and iodine applied. On May 31, just five days after the injury, patient noticed he could not eat without some pain, especially when he tried to open mouth wide. June 1, he had difficulty in swallowing. Patient admitted to hospital June 4.

Examination showed a healthy eleven year old boy, unable to open mouth or talk well. Tongue protruded between the teeth with difficulty. Examination of throat by specialist showed enlarged tonsils, but no acute infection. Chest normal. This patient had no other muscular rigidity with the exception of slight opisthotonus. All reflexes were exaggerated.

Course: This patient did not get intraspinal antitoxin, but other treatment was the same.

June 8: Patient much better, able to talk.

June 9: Patient allowed up in chair and for financial reasons was allowed to go home on June 10.

For two weeks after he left the hospital he was unable to walk, but at the end of the month there was no evidence of such spasm.

Case V. J. J. File No. 1483, City Hospital, 1931. Referred by Dr. T., aged twenty-four. Negro, admitted to hospital July 12, 1931.

History of Injury: Colored man with no history of injury, but we removed a splinter from plantar surface of foot. History given by members of family is that five days ago he had sore throat and stiffness of muscles of neck and jaws which got worse until July 11, he began to have convulsions with white, frothy sputum pouring from mouth. The convulsions occurred every hour and lasted from two to four minutes; he was conscious between

spasms. The family on being asked why they had not brought him sooner said they were waiting for a brother to come who was out of town.

Examination: On admittance Sunday morning, July 12, the first impression was that patient was in a hopeless condition, especially after a convulsion lasting for fully five to eight minutes. Spastic smile, skin dehydrated, restless, but partly conscious, a board-like rigidity of all muscles. Temperature 104 degrees F., unable to get pulse, respiration 58, shallow and labored respiration. Blood count 10,350, 88 per cent polymorphonuclears. Urine four-plus albumin, cloudy.

Course: Full treatment was given, with no improvement. Pulse was never under 160. Convulsions continued. Patient died 1:30 A.M., July 13th.

I believe this man could have been saved if he had been brought to the hospital five days before when the disease first manifested itself. This is a death due to ignorance ; all the negroes believed he had been "conjured."

Case VI. L. G., File No. 2394, 1932, girl aged 7. Admitted to the City Hospital October 9, at 7:45 P.M., 1932.

History of Injury: Nail injury of the foot on the afternoon of October 4th. The nail, entered the sole of the foot about one inch. Wound was treated by family with an application of turpentine. The first symptoms of trouble began on the night of October 8, patient complaining of pain in the throat. She had abdominal pain after taking water. The following day neck got stiff and at 5 P.M. had a convulsion.

Examination: showed a child well nourished having convulsions, perfectly conscious. The entire spine rigid, a spasm of muscles of mastication. Reflexes markedly exaggerated.

Course: Complete treatment was given with no improvement. The convulsions were about the same until 12:30 on the same night. She had a very hard convulsion and died.

This case represents a small per cent of cases with such overwhelming infection and rapid onset that treatment seems hopeless. However, I believe that all cases should receive treatment.

*References*

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2. Graham, E. A., (Ed.) *General Surgery*. The Practical Medicine Series. Year Book Publishers, 1930, p. 101.
3. Polloni, S. J. A. M. A., 97: 143, 1931.

**DISCUSSION**

(Dr. R. S. Cathcart, of Charleston, presented Dr. William Davis Haggard, of Nashville, Tenn., honored guest at this meeting, who spoke as follows:)

Dr. William Davis Haggard, Nashville, Tenn.:

My friends, it is a pleasure to be here. I have been very much edified by the symposium I have just heard, and it reflects great credit upon the men who have taken part. It seems to me I have heard no better summary of the medical character of the grave type of injuries which we are accustomed to see now.

The House of Delegates of the British Medical Association was considering how their members might be protected in the case of these individuals who sustain severe injuries. Of course, we must play the part of the Good Samaritan, but often afterward they forget the physician entirely.

In our state the legislature is meeting now (more is the pity; I suppose you feel the same way): A model bill has been formulated by the American Medical Association's Department of Legal Medicine providing for a lien on any indemnity that the injured individual might be entitled to—a lien first for the hospital and next for the practitioner. I wondered, while I was listening to these papers, whether or not you had ever considered that in this state, if not, it might be the part of wisdom to have such a bill prepared and introduced in your legislature. I throw that out just as a suggestion; it is not scientific, but we must survive in these perilous times, and I do believe it would be the part of good judgment to have such a bill introduced in all our state legislatures. Have you that here, Dr. Young? (Dr. Young: No.) I thought you had everything in South Carolina, iodin being the basis of life. (Laughter.)

This model bill appeared in the February Bulletin of the American Medical Association. It was introduced in our legislature. I thought I had some little standing in my place of residence, and my colleagues did, also. They said: "You just come up to the Capitol and meet with the Senate and tell them about it." So I went up to the Capitol. The senator from Memphis (which is not Tennessee proper, except at times when the legislature is in session; it is a Mississippi and Arkansas town, but it does control the rest of Tennessee) said: "We are not interested in a lien

for the doctors; we do not want a lien to intervene." And, do you know, they beat our bill with just that one little statement.

I deem it an honor to meet with the physicians and surgeons of the great Palmetto State. (Applause.)

Dr. C. B. Epps, Sumter:

I have listened with much interest to all of these papers. I have had, I believe, seven cases of tetanus in all, so far as I remember. I have managed to save only five of the seven. I give the antitoxin always; intravenously, intraspinaly, etc.

Now, I have heard it said that you should not handle the injury much. I believe in opening the injured area up thoroughly and swabbing it out with silver nitrate; and in beginning, as soon as possible, the antitoxin treatments.

There is also much argument as to how much to give. One author says to give 120,000 units, at least; but, in these days of financial stress, when one has to pay \$12 for 10,000 units, we find it very hard sometimes to handle that much; and I wonder just how much of it one ought to have. I have a patient now who, because of the financial element (which I think we all have to consider), has had, all together 20,000 units, and he is almost well. But if a patient is able financially to meet the cost, I say give him plenty and as often as indicated.

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### AN INTERESTING PROBLEM IN THE AFTER CARE OF HEMORRHOIDEC- TOMIES

*By Thomas Brockman, M.D., Sylvester Cain,  
Jr. M.D., Greenville, S. C.*

Our motive for bringing this paper before the Society is twofold.

1. To ascertain if members of the Society have a similar problem arising in their practice.

2. If so how they go about handling it. Our practice until very recently has been entirely private. In doing hemorrhoidectomies, we endeavor to follow a routine similar to that practiced by several members of this Society, although not adhering strictly to anyone.

At operation we usually follow or do ligation and dissection suturing the membrane half-way to anal margin and when deemed necessary the suture is carried to mucocutaneous junction. At the base of each hemorrhoid a pointed strip of integument is usually removed

for drainage. Flip rubber or small anointed gauze wicks are inserted for drains. The usual after care including irrigations, hot Dakins solution compresses, hot Sitz baths following stools, and regular gloved finger dilating is used for all cases.

In the general run of hemorrhoidectomies there is a certain type individual who disrupts the usual procedure of after care by the early development of extreme sphincter spasm, undue pain and discomfort, all leading to delayed healing. On mentioning the development of spasticity, pain and delayed healing, we are not referring to the ordinary discomforts and difficulties to be expected in any hemorrhoidectomy, but have in mind the very unusual individual whose discomforts and reactions are out of all proportion to the surgery to which he has been subjected. Frequently our office force can recognize this type individual and tell us about them before we see them. They come with fear and trembling, are difficult to examine. React hardly at all to pre-operative sedatives and go on the table in a state of extreme apprehension. It is from this group that practically one hundred per cent of our local anaesthesia failures can be drawn, and we have our share.

Postoperatively, he requires more opiates, frequently becomes prostrate, more often requires catheterization, and early develops the symptom-complex of spasticity and pain which steadily grows more pronounced, especially when dilatation is attempted, and finally reaches the stage when a general anaesthetic is required to execute simple dilatation.

When we begin to analyze these cases in order to formulate some idea as to why these untoward symptoms develop, many questions arise in our minds. First, we wonder if this has been the result of faulty technique or neglect in the after care, but find that these patients have had the same surgical technique and diligent after care as other patients have received. Therefore, we feel justified in saying that this is not the source from which these untoward symptoms arise. Years ago, when the cautery was more extensively used than at present, we observed both in our practice and that of other surgeons cases of an exaggerated chain of symptoms similar to those outlined above, which we later attributed to the use of the

cautery. But since we do not use the cautery, we can easily eliminate this possible source. Next, it occurred that possibly the amount of tissue removed might explain the symptoms; but a check up from this angle revealed that in cases where an enormous amount of pathological tissue had been removed, the patients had uneventful recoveries and on the other hand, in cases in which a minimum amount of tissue had been removed, the distressing symptoms as above listed could develop. Therefore, we feel that this is not adequate to explain the problem.

In the process of examining patients recto- and sigmoidoscopic examinations are done routinely, and we frequently are confronted with mucous membrane that, although it shows the presence of no ulceration, is abnormal to the extent that the entire mucosa is heavily injected and frequently edematous and will bleed from trauma as light as the use of the cotton swab. It would seem that this type of gut would naturally predispose to just such symptoms as we have outlined post operatively, but such is not the case in all instances, at least. However, when infection is so extensive as to include the anal canal and peri-anal tissues, it is we believe a definite factor in that it is a forerunner of prolific granulations and fibrous tissue elements; the development of which we believe to be the pathologic basis of the symptoms we have described.

It is an interesting speculation to wonder why some of these terminal bowel infections are content to bury themselves into the sub-mucous tissues and not invade the peri-rectal spaces, where abscess formation would be inevitable. While others apparently of less extensive origin, and in clinically normal mucosa will find means to penetrate themselves into the peri-rectal spaces and there set up or develop into peri-anal, peri-rectal or ischiorectal abscesses. Let it not be misunderstood that we are unmindful of the fact that cryptic infection often unnoticed can be and frequently is the source from which these abscesses are derived. It goes without saying that the above mentioned type of infections find their origin from infected areas in remote parts of the body. It is not our purpose here to attempt to explain the route by which these infections reach the rectal area. Whether by direct pas-

sage through the alimentary canal or through the blood stream, the fact of the varied source may be a possible explanation of the varied manifestations of the tissues reaction, since the type of infection would be as varied as its original source.

However, the type that has most frequently been involved in the production of the symptom complex constituting our problem is, the individual with a history of marked oral sepsis resulting in the loss of all teeth, who for years can be easily gathered from the history has lived on a diet in which the vitamin and mineral content has been conspicuously neglected. As is known by every one, the work done by various men along the line of dietetics is coming more and more to show the vital role played by the various vitamins in supporting the individual in his resistance to infection in its various aspects and in the various systems of the body. Only recently a very strong argument as to the important role Vitamin A. plays in the resistance to infections of the Genito Urinary system has been brought to light.

We are all familiar with the various other diseases attributed to the lack or absence of one vitamin or another. Referring back to the individual who has lived so long on a diet obviously inadequate in its general vitamin content and mineral balance, why is it not reasonable to suppose that his susceptibility to terminal bowel infections is due to the inadequate vitamin content of the diet? To further enlarge on this individual does it not call to your mind many of the patients previously labeled neurasthenics by many physicians?

It is not our purpose to suggest that proctologists assume the *dual* role of surgeons and internists but at the same time, unless we can recognize the possibilities in a given case, we will find ourselves incapable of supervising the after care in such patients.

Having explained as briefly as possible the problem and its possibly underlying pathology, we enter into its treatment in which the diet plays an important role. The rationale for this can possibly best be explained by the lesson learned from our fellow surgeons of the O.R.L. Dept. who as a means of treating chronic sinus infections, long since found to resist possible improvement through surgical intervention,

have resorted to dietetic measures which depends on both the vitamin content and proper mineral balance.

In August 1931 according to reports from the Mayo Clinic, the average American diet was found to be low in vitamins, residue and alkaline minerals and high in carbohydrate and acid minerals. Since the presence of calcium in the tissues especially skin and mucous membrane tends to counteract inflammation and since sodium exerts a much stronger affinity for these tissues, and by the mere presence interferes with the assimilation of calcium, it becomes obvious that a proper balance between the acid and alkaline mineral is necessary in counteracting inflammation in the skin and mucous membranes so that the basis of the diet recommended comes to be one of an alkaline ash, consisting of fresh foods and restricting of salt to the actual body requirement so far as is possible. The daily body requirement of sodium chloride is one and one half to two and one half grams and the average daily intake of the average American is from ten to fifteen times this amount.

To further supplement this diet vitamins in concentration are added when thought necessary in the form of cod liver oil, spirinrate, brewers yeast, wheat germ, tomato, lemon and orange juice, etc. Although the number of patients are far too few to justify a reliable opinion as to the merits of this procedure, we feel that the results have been sufficiently encouraging to warrants its use. This dietary regime is instituted in addition to usual after care.

When it is found to be impossible to effect proper dilatation, a short general anaesthetic is given and wide dilatation amounting almost to divulsion is done. Occasionally a partial proctotomy is finally resorted to.

#### Summary

1. There are a certain number of individuals who develop an untoward chain of symptoms, consisting of sphincteric spasm, undue pain and discomfort leading to very prolonged healing time and tedious after care.

2. Surgical technique does not seem to be at fault.

3. The amount of tissue removed seems to be irrelevant.

4. The presence of low grade infection in the surrounding anal tissues which seems to have a tendency to the formation of excessive granulation and fibrous tissue elements.

5. The source of this infection is obviously from various foci in remote parts of the body.

6. The source most commonly associated with the particular type constituting the problem with which we are dealing is that of pronounced oral sepsis.

7. The type individual usually comes under the class commonly labeled neurasthenics and invariably give the history of both inadequate and an imbalanced food intake over a period of years. This imbalance includes both vitamin inadequacy and mineral deficiency.

8. Naturally treatment includes the correction of the diet, the basis of which comes to be an alkaline ash diet high in vitamin content with the restriction of salt intake to that of actual body requirement.

### DISCUSSION

Dr. J. D. Guess, Greenville:

Dr. Brockman has presented a problem for our discussion and interest that is familiar to all of us who do many hemorrhoidectomies, the problem of slow healing following hemorrhoidectomy, with the development of symptoms far in excess of what one would expect from the operative procedure done. He has presented a rather interesting and rather ingenious discussion as to what is the basis for this unusual reaction following this operation. In the first place, he has said that it occurs most frequently in that type of individual which is termed "neurasthenic." Now, I have wondered about various problems that come up in handling neurasthenics, and I have wondered about this particular thing that Dr. Brockman has presented this morning. It had been my observation that in many neurasthenic individuals there is a tendency towards or an actual presence of spasticity of the colon and of spasticity of the sphincter muscle itself. This spasticity of the sphincter muscle has a peculiar feel. I have tried to describe exactly what the finger feels when the muscle is palpated. It is tight; it comes back when the finger attempts to stretch it; and when it does give it gives a sensation of tearing in small bits, somewhat as wet blotting paper would tear, perhaps. Now, whether or not the matter of diet and the matter of oral sepsis plays an important etiological part in the neurasthenia or an important part etiologically in this post-operative condition which develops in neurasthenics I am not able to say. It is interesting to think upon, and perhaps as time goes on something more definite can

be said with regard to it as a factor. I have felt for some time (I may be reactionary or I may be ignorant) that so far as the average American is concerned, and particularly so far as the average Southern American is concerned, we have tended to place too great importance upon dietary deficiencies in our infectious troubles and in some other types of disease which we are tending to blame on diet. I do not know what the importance of vitamin A will ultimately be determined to be; I do not know how much vitamin A will be necessary in our diet. Frankly, I do not think there is as great an actual deficiency in this vitamin as some of us are talking and thinking.

Now, with regard to the handling of the problem after it has been found to exist. The doctor says that frequently he has to give a general anesthetic and dilate or actually divulge or perhaps sometimes actually cut the sphincter muscle. I have felt that in this type of case local anesthesia in the original handling of the case was not the preferable type; and I have felt that in this particular type of case the operation should be done under general or under spinal anesthesia and that at the time of operation there should be wide dilatation of the muscle or perhaps even division of the muscle at that time, because the dilatation of this muscle, acting as a rather strenuous form of massage, tends to bring about a considerable absorption of cellular infiltration that certainly exists. More than that, it allows of drainage to a far better extent than can be brought about by post operative treatment.

Dr. J. W. Jervey, Jr., Greenville:

I had not intended to discuss this paper of Dr. Brockman's, but inasmuch as I was partly implicated in some of the statements I do not like to let his statement about food go by without expressing my personal feeling that the work which has been done in biochemistry in the last few years is a work of tremendous importance. Dr. Guess's statement about the Southern physician and his ideas on food should not lead us into passing up a very interesting field and one which I believe will furnish us a great deal of information. The difficulty in dealing with this question is the fact that it can not be done by a single physician but must be handled by the aid of biochemical laboratories and specialists in various fields. We can not forget that one of the latest new treatments (that of pernicious anemia) has been brought forward as a result largely of delving into the matter of food, and it may well be that we shall discover other things in different fields which will be of just as tremendous significance.

Dr. Brockman, closing the discussion:

I want to thank the gentlemen for the fine discussion, and I do want to say this in regard to this

influence of foods over tissue. I have heard Dr. Jervey, Sr., talk quite a bit about this problem. He made an impression on me two years ago, but it did not soak in; I did not know enough of the subject. But he told me he could look at the mucous membrane of the nose and tell what kind of diet that patient had been living on. I thought one day I would test him out. I knew a certain patient had been on a strict diet for two years; she had had arthritis and had gone on a strict diet—fruits, and vegetables and some starches, and no meats at all. I asked her if she would go around and have Dr. Jervey examine her nose and see if he could tell what kind of diet she was on. He looked at her nose and said: "You have not been eating any meat for a long time; why don't you eat meat?" She said: "I have arthri-

tis and have been off meat for two years." He said: "Well, you need meat; eat meat; eat salt pork, eat chicken, fish—anything." So when she came back and told me what he said I decided he knew something about it. I have heard him say that people who eat a lot of starches have a starch bridge that looks like a buck-up in the pavement from heat.

About the dilating to which Dr. Guess referred, and about cutting the sphincter, I have this feeling: I do not want to meet an old fellow, when we are both getting pretty old, both with canes, if I have cut his sphincter, because he might wade into me, and I might not be able to run. I am going to reserve the cutting of the sphincter until I am sure it will have to be done to give a better outlet.

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#### NEWBERRY COUNTY MEDICAL SOCIETY PASS RESOLUTIONS OF RESPECT FOR DR. W. D. SENN.

The Newberry County Medical society met Friday, December 1st, at the chamber of commerce. Sixteen members were present.

Officers were elected as follows: President, Dr. H. B. Thomas, Whitmire; vice president, Dr. Robert W. Houseal, Newberry; secretary-treasurer, Dr. H. B. Senn, Newberry.

The following tribute was read:

##### Dr. William David Senn.

He made his entrance into his earthly life May 6, 1859, passed across the stage, performing his part well, and made his exit November 23, 1933.

Dr. William David Senn was a man of many parts, and in every characteristic of his life, a man to be admired.

Faithful in his profession, he was always at-

tentive to those under his care, and created a large following and made a success in life.

Genial and happy in disposition, friendly toward everybody, he met people on one common plane.

In his home life he was lovable and manifested this in many ways of which the public are not aware.

Among his professional associates he was cordial and cooperative; and he showed an interest in medicine as a science, as well as the welfare of those under treatment.

As a member of this society he was always loyal and faithful in the performance of his duty. In his passing Newberry County Medical society feels a distinctive loss, and only pleasant memories can recall his presence with us.

It is fitting that we subscribe to these testimonials, thereby showing our appreciation of the worth of our deceased member.

Also that we extend to his family our sincere sympathy in their bereavement.

## S U R G E R Y

Wm. H. Prioleau, M.D., F.A.C.S., Charleston, S. C.

### "INDICATIONS FOR ENTEROSTOMY"

Enterostomy is used with satisfactory results by a number of surgeons while others question its value. This is probably due to a lack of understanding of what it is intended to accomplish, resulting in its use when it is not indicated. The purpose of an enterostomy is to prevent distention by providing an easy outlet for the liquid and gaseous content of the small bowel. In order for it to drain more than one loop it is necessary that there be present a certain amount of bowel tone and peristalsis. It is erroneous to think that its primary function is to prevent the absorption of toxic material.

It has been quite conclusively shown that a healthy mucosa does not absorb substances it should not absorb. Also that there is no specific toxic material formed in obstructed bowel. While the contents are toxic when absorbed, they are absorbed only through damaged mucosa. Enterostomy is done to prevent overdistention which in itself can cause damage even to the point of gangrene to the mucosa, though the mesenteric circulation is intact.

Enterostomy is of particular value in cases of intestinal obstruction—especially post-operative cases, for here there is not so likely to be an interference with the circulation of the obstructed loop. In other cases of obstruction it is of course advisable to relieve the cause if the condition of the patient permits, for very often it is of a nature which will produce gangrene. On this account should enterostomy be done as a primary operation, the exploration should be done within 24 to 48 hours. Even though the obstruction is relieved an enterostomy is often of great help, for the distended bowel may have

very little tone and be unable to empty itself by normal peristaltic action.

The use of enterostomy in advanced appendicitis will greatly diminish the mortality rate. In these cases the intestines are distended and have a minimum of tone and peristalsis due to the inflammatory process. Relief of the distention gives a better blood supply which no doubt helps greatly in combating the peritonitis. With the accompanying reduction of the intra-abdominal pressure there would naturally be less absorption of inflammatory products by the peritoneal surface.

In performing the enterostomy the technic of Witzel is the one of choice. A No. 16 or 18 F soft rubber catheter is passed into the lumen through an incision and held in place by a pursestring of fine linen. Sutures are so placed that the tube runs in an oblique channel of bowel wall for a few centimeters. The result is a valve effect which closes without leakage when the tube is removed. The loop is sutured to the parietal peritoneum by one or two stitches. It is best done through a small stab wound to the side of the main incision. The most accessible distended loop is used. It can not be overemphasized that in order for it to function, the enterostomy must be done while there is still some bowel tone and peristalsis. This is usually detected by audible borborygmi. However even in a silent abdomen it is worthwhile to perform the operation as it is sometimes of value.

This article is based upon that of Dr. T. G. Orr and the accompanying discussions of Doctors Gatch, Horsley and Hendon, J.A.M.A. 101:1300, October 21, 1932. It is in complete accord with my own experiences.

## THE UROLOGICAL ASSOCIATION OF SOUTH CAROLINA

Paul W. Sanders, Jr., M.D., Charleston, S. C.

### \*PRESIDENT'S ADDRESS

By J. D. Whaley, M.D., Charleston, S. C.

### CURRENT TOPICS IN UROLOGY

Urology has always been a most important specialty and during the past three or four years several valuable procedures have been perfected. These have come about by many painstaking efforts to bring them down to present day perfection and yet as there is always room for improvement, our efforts will be considered quite crude and almost obsolete by the next generation.

Should one ask what has been done recently we can refer him to our medical journals where urology, rather proudly, has occupied considerable space and, what is more, done something of real value.

Intravenous or excretion urography, conceived years ago, has been perfected to where it is a most valuable aid to diagnosis. It never will in my estimation supplant the retrograde method, as actual inspection of the interior of the bladder will always be necessary, and a pyelogram at this time adds little inconvenience to the patient.

During the past year offhand I recall two cases which I will hastily cite as examples where intravenous urography was indicated and well nigh indispensable. One was a female who at operation for some pelvic disorder had had the unfortunate accident of getting a ureter injured. This was blocked from below and an intravenous urogram showed very accurately just where the ureter was injured and the condition of that kidney.

Another case was that of a young man with acute gonorrhreal urethritis and a large tender mass in the upper right abdomen. Temperature elevated, impracticable to do a retrograde urogram. Intravenously the mass was proven

to be a large hydronephrotic kidney with a partially obstructed ureter.

Numerous other cases could be cited but sufficient to state that in intravenous urography we have a most valuable aid to diagnosis which fills the gap that the older method could not bridge.

Our experience here is that other physicians have very considerably not attempted to use the fruits of our labor to their advantage. Elsewhere I understand that intravenous urography is used quite frequently by those doing everything in general.

Hardly had the novelty of this worn off before still another and equally important method illustrating beautifully evolution, was highly perfected and perhaps too widely accepted. A member of our organization was a pioneer in this and, as is often the case others, seeing the obvious, have stepped in and now claim the glory. If Guthrie could observe the neat and precise work that is now done under full vision with a'equate means for the control of hemorrhage he probably would look with shame at his crude instruments of one hundred years ago but at the same time triumphantly say in the words of the poet,

"Nor deem the irrevocable past  
As wholly wasted, wholly vain  
If, rising in its wrecks at last  
To something nobler we attain."

Trans-urethral prostatic resection has certainly become very popular throughout the land but from here and there and perhaps yonder come unfavorable reports. Many urologists find that there are cases which, in their hands, the resectoscope is not adaptable while in the majority of cases they use it with reasonable success. From the current literature many have gotten the idea that the procedure is very simple, all one needs is the apparatus, some one to work on and after several days in the hospital the patient will be as good as new. The lure

\*Read before the Urological Association of South Carolina, Charleston, S. C., November 7, 1933.

has been so enticing that even a few general surgeons and practitioners with little or no cystoscopic experience have partaken and usually with very poor results. Many urologists have likewise been dazzled and have found that they were not near so skillful instrumenteurs as they thought. The reason for many of the poor results lies in the fact that we have lost sight of the fact that a prostatectomy is a prostatectomy regardless of how it is done and is a serious operation. We have let up on our careful system of preliminary preparation to get our patient in the acme of shape, in brief we have taken the subject too lightly, been likewise dazzled and unfortunately learned by experience that old acquaintances should not be forgotten.

One idea that has perhaps come to more minds than my own is this, shall we in the future see a considerable increase in prostatic malignancies in patients having had a resection and with a pathological report as non-malignant? Tissue removed with the resectoscope in the hands of the majority of us amounts to a good biopsy and we all know how reliable biopsies are, if positive, conclusive, if negative, questionable. Whereas with either of the old methods of prostatectomy all of the adenomas were removed and now and then malignancies were picked up by the pathologist in their incipency and quite often these cases were cured. Should these have been resected, the malignant portions would doubtless have been imperfectly removed and later obvious malignancy develop.

Leaving this subject for time alone to prove its worth, let us pass on to other current topics.

Lying dejected, despairing, despised by their fellow men and receiving unwilling attention in isolated areas of our general hospital and in the general hospitals of the south especially, are anemic, undernourished individuals of both sexes with large, genital ulcerations, lymphedema and other accessories to match. At our local hospital, ward and out patient department we have always had a generous supply of cases of Granuloma Inguinale. Tartar Emetic was dispensed freely, local cleanliness insisted on and early cases healed reasonably well. Recurrent cases and extreme cases usually lingered for months, little could be accomplished, cooperation was very poor and whether at home or in hospital, sepsis and

secondary anemia were their fate ultimately for "there is no armor against fate. Death lays its icy hands on kings." Now there is an armor against this particular fate in the form of Fouadin, named after a king, a less toxic and much more specific form of antimony. This preparation has been described as a "boon to granulomatous humanity" and was primarily intended for the treatment of Bilharziasis, or Egyptian Hematuria. We have tried this drug and in a surprising length of time ulcerations even of many years standing and treatment have healed. This should be of great interest to us in our Southland, not as a source of income, for all of these patients are negroes, usually the poorest and least worth while, but as a means of actually doing something really of value and within a reasonable length of time for these sorely affected people.

Another very widely useful procedure of especial benefit in Gonorrhea and Syphilis and to almost everything in general has been the subject of non-specific protein therapy. This form of treatment has demonstrated most miraculous results especially in cerebro spinal syphilis, a little far afield perhaps, but some of our members from Columbia and especially the State Hospital can confirm this statement.

In gonorrhea where nothing seems to be of especial value as far as treatment is concerned, non-specific protein therapy seems to be of advantage especially in serous membrane involvement as injections allay pain and promote speedy convalescence.

As we gather here tonight and throughout the coming years let us begin to devise plans of cooperation whereby we can assist those actively engaged in public health and the venereal disease problem. Shall we stand by and see diseases which we know so much about and which are so easily prevented, ravage and continue to ravage our people? Surely there is some solution which the future holds and which we must search for. We cannot find the answer to such problems by luck or chance. Systematic work is necessary and we should turn our eyes to those physicians of the past who stand out as leaders, for

"The heights by great men reached and kept  
Were not attained by sudden flight,  
But labor and toil." —

But they while their companions slept  
Toiled upwards in the night."  
They have toiled and sacrificed that our heritage

might be brighter, and with these advantages surely something can soon be done by us, suffering humanity praying that such a time will not be long in coming.

## TUBERCULOSIS ABSTRACTS

*A Review for Physicians*

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Vol. VI

DECEMBER, 1933

No. 12

The need for assorting cases of pulmonary tuberculosis into definite groups led, some years ago, to the formulation of a scheme of classification. It is based primarily on the extent of the lesion and is now widely used by sanatoria and clinicians. In recent years, interest has been centered on the character of the fundamental tissue reaction in the lungs. Accordingly, Dr. George G. Ornstein and his coworkers have attempted to classify the disease on a qualitative basis of tissue reaction resulting from infection by the tubercle bacillus. They describe three main types of acute tuberculosis. Abstracts of the paper by Drs. Ornstein and Ulmar follow.

### ACUTE FORMS OF PULMONARY TUBERCULOSIS

The authors disagree with the conception that tuberculosis usually begins as a minimal lesion and slowly progresses to the far advanced stage. They point out that inflammatory forms can occur with an acuteness not usually attributed to tuberculous infection, a small or large part of one or both lungs being involved within a few hours.

#### *The Exudative Type*

This is characterized by an intense inflammatory reaction produced by a small dose of tubercle bacilli in highly sensitized tissue. The response is chiefly serous, there is little if any destruction of tissue and the process clears by resolution.

Clinically it is frequently confused with the acute cold, grippal infections and broncho-pneumonia. The patient is taken acutely ill with fever, cough and expectoration. Fortunately, hemoptysis (40 per cent of cases) or history of contact frequently indicate tuberculosis. Physical signs are scanty. However, X-ray is start-

ing because of the extent of the lesion. Complete resolution rapidly occurs, frequently leaving no trace of the original infection.

Therapeutic indications are, (1) no interference with the normal return to *status quo* by any operative procedure and (2) avoidance of reinfection.

*Case 1:* A young woman, white, 29 years old, stenographer, presented herself because of an acute cold with cough, which persisted. She had had contact with a tuberculous father, who had died a few years previously, and more recently with a sister, who had recovered from tuberculosis. Her cough was not severe and she expectorated at times. She had lost some weight and complained of marked fatigue. Physical findings were scant: dulness on percussion and bronchovesicular breathing over the right upper lobe posteriorly, and moist rales were also heard from the apex to the fifth rib posteriorly.

X-ray disclosed a small annular shadow in the right upper lobe. There were some acinous productive changes in the left upper lobe. Examination of the sputum disclosed tubercle bacilli. The patient was sent to the country on a modified rest regimen. Her symptoms quickly disappeared. She gained weight rapidly. Six weeks later no abnormal findings were heard; she had no complaints; she gained 14 pounds. The annular shadow in her first X-ray had disappeared.

#### *The Exudative-Productive Type*

This type is undoubtedly due to a different balance between the mass of dosage or virulence of the organism and the allergic tissue reaction of the host. Instead of a purely exudative response there is evidence of tissue destruction, and the process of destruction and subsequent reparation is usually somewhat lengthy.

Clinically this form is characterized by an acute onset with toxemia of moderate severity which persists for a much longer time than in the exudative type. Eventually the symptoms disappear and X-ray shows clearing which is not however complete. A linear type of scarring, the result of the peculiar type of lung-damage which occurred at the onset of the disease, always remains. The patient recovers not by any means of operative interference but by being let alone and protected against any further reinfecting dosage. Surgical interference, in the opinion of the authors, cannot improve upon the results obtained through the normal unaided process of nature.

*Case 3:* A man, white, 25 years of age became ill, June, 1929, with an acute pneumonic condition. For two weeks the patient ran an elevation of temperature which subsided. He was then X-rayed and a diagnosis of tuberculosis was made. Tubercle bacilli were demonstrated in his sputum. He was sent to a sanatorium and was put to bed. His cough and expectoration subsided rapidly.

An X-ray was taken June 1, 1929. In the dense exudative shadow there were some highlights which appeared like cavity-formation. An X-ray, taken thirty-seven days later, demonstrated beginning resolution. An annular shadow was still present in the 2nd interspace which was still interpreted as a cavity. Four months later the cavity had disappeared, and further resolution throughout was noted.

An X-ray was taken on December 16, 1929. By this time the patient had completely lost his cough and expectoration. He had gained weight. The X-ray demonstrated further resolution. Because of the irregular absorption of the exudate the X-ray gave one the impression of a large annular shadow being present which could easily be interpreted as a large cavity. The patient enjoyed good health throughout this period; there were no physical findings. The X-ray of July 12, 1930, showed a breaking-up of the walls of this annular shadow leaving linear strands of fibrosis.

On December 4, 1930, there were some linear strands in the right upper lobe. X-ray of February 14, 1931, showed still further resolution, leaving a few strands of fibrotic tissue.

The X-ray of April 12, 1932, showed no evi-

dence of the acute inflammatory tuberculosis which had existed in the right upper lobe. At this time one would be very hesitant to state whether a tuberculous process had existed. This case is an excellent example of the possibility of resolution in acute inflammatory forms of tuberculosis. Any form of surgical or medical therapy would have produced a good result.

#### *The Caseous-Pneumonic Type*

Here, because of excessive stimulation of hypersensitive tissue by massive dosage, there is an intense inflammatory response resulting early in the disease, in cell death with its resulting coagulation necrosis or caseation. As a result the patient is very ill and toxic with profuse cough and expectoration as liquefaction of the caseated area occurs. As the caseous material is sloughed out, toxic absorption begins to diminish and temperature and pulse gradually approach the normal. With the completion of the sloughing the patient feels relatively well although there is now a definite cavity present in place of the previous area of caseation.

From now on repair proceeds with resultant scar formation. What makes the ultimate outlook for this patient bad is the constant shedding of tubercle bacilli from the wall of the cavity with the ever present danger of bronchogenic dissemination and spread of disease. It is this bad mechanical end result that our treatment must aim to prevent or correct. The danger is not the cavity but the positive sputum. Some form of compression therapy is indicated and this must await the completion of the acute stage.

The ultimate goal is a negative sputum and if this is not achieved by the use of pneumothorax some other form of compression therapy must be used, notably thoracoplasty or apicectomy. The authors' experience with phrenic neurectomy has been totally disappointing.

*Case 7:* A young woman, 25 years of age, who had been chronically ill a year and six months. Admitted to Metropolitan Hospital, June 9, 1931, complaining of cough, expectoration and repeated hemoptysis, having had a severe one just before her admission to the hospital. The whole left lung was involved with multilocular cavities; her sputum contained many bacilli. Collapse of the left lung by pneu-

mothorax had failed because of obliterate pleuritis. X-ray examination of October 29, 1931, demonstrated an extensive tuberculous lesion involving the whole left lung, with the trachea and mediastinum pulled into the left thorax and a sharp rise of the left diaphragm. There was narrowing of the intercostal spaces throughout the whole left thorax.

A paravertebral thoracoplasty was performed in two stages by Dr. Coryllos. The general

condition of the patient is improved. There has been little expectoration, with this little negative for tubercle bacilli. This is an excellent example of the importance of surgery changing the prognosis from a very poor to a most favorable one.

*The Treatment of Acute Forms of Pulmonary Tuberculosis, Am. Rev. of Tuberc., Oct., 1933.*

## SOCIETY REPORTS

### THE FIRST DISTRICT MEDICAL ASSOCIATION, SEMI-ANNUAL MEETING, WEDNESDAY, NOVEMBER 22, 1933, RIDGELAND, S. C.

#### Program

- 4 P. M.—Call to order.
1. Functional Sterility—Dr. A. J. Buist, Jr., Charleston, S. C.
2. The Diagnosis and Treatment of Coronary Thrombosis—Dr. J. H. Cannon, Charleston, S. C.
3. Nephrotic Edema, The Treatment, Case Report—Dr. A. J. Waring, Savannah, Ga.
4. The Diagnosis of Chest Conditions by X-Ray—Dr. H. Rudisell, Charleston, S. C.

Paul W. Sanders, Jr., M.D.,  
Secretary.

### PROCEEDINGS OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, WHICH WAS HELD AT ROPER HOSPITAL TUESDAY EVENING, OCTOBER 24TH, 1933, at 8:30 O'CLOCK

The meeting was called to order by the President, Dr. Daniel L. Maguire:

Present: Doctors: A. E. Baker, Jr.; Banov; Barnwell; Boette; A. J. Buist; A. J. Buist, Jr.; Burn; Cannon; Chamberlain; Culbreath; de Saussure; W. H. Frampton; Gant; Hope; Jenkins; F. B. Johnson; Lynch; McInnes; Maguire; Martin; Meed; O'Driscoll; Peeples; F. R. Price; Prioleau; J. J. Ravenel; W. M. Rhett; Richards; Rudisill; Rutledge; Sams; Sanders; Scott; W. A. Smith; W. H. Speisegger; Sughrue; J. F. Townsend; Waring; Whaley; I. R. Wilson; I. R. Wilson, Jr.; Robert Wilson; R. Wilson, Jr.; Zerbst. (44).

Guests: Dr. H. C. Buchmeister, of Boston; and Dr. Lassek of the Medical College.

The minutes of the meeting of October 10th were read, corrected, and confirmed.

The Secretary reported that the applications for membership of Doctors Branford and Steinberg had been approved by the Board of Censors, and that they were now eligible for election. At the direction of the President, ballots were prepared and Dr. W. V. Branford was unanimously elected a member. Ballots were then taken for Dr. Matthew Steinberg and he was unanimously elected to membership. The President directed the Secretary to request the newly elected members to be present at the next meeting in order that they may sign the constitution.

Under Reports of Officers and Committee, Dr. K. M. Lynch, Chairman of the Committee on Public Health and Legislation submitted the following:

The committee finds that Mr. E. P. Grice, head of the local Federal relief and administration, has in hand the new regulations concerning compensa-

### PROGRAM FIFTH DISTRICT MEDICAL SOCIETY, LANCASTER, S. C., NOV. 7, 1933, AMERICAN LEGION HALL

Invocation—Rev. W. S. Patterson.

Address of Welcome—Hon. Roach S. Stewart.

#### Papers

"Review of Peptic Ulcer"—John M. Preston, M.D., Lancaster, S. C.

"Allergic Dermatoses"—J. Richard Allison, M.D., Columbia, S. C.

"A Discussion Of Acute Inflammations of the Brain and Spinal Cord"—A. A. Barron, M.D., Charlotte, N. C.

"The Emergency Relief Act"—Circular No. 7—R. E. Abell, M.D., Pres. S. C. M. A., Chester, S. C.

"Some Practical Remarks On Foreign Bodies of the Food and Air Passages," with Lantern Slides—V. K. Hart, M.D., Charlotte, N. C.

"Practical Discussion Of the Acute Abdomen"—W. B. Ward, M.D., Rock Hill, S. C.

W. R. WALLACE, M.D., President.

W. J. HENRY, M.D., Secretary.

tion for medical service to recipients of unemployment relief, as reported in the Journal of the American Medical Association, September 23, 1933, and will be glad to arrange an agreement with the Medical Society as to a fee schedule for such service and a list of physicians eligible to and willing to accept such practise.

Mr. Grice has not had instructions as yet from the State relief administration as to putting these regulations in force and probably will wait for such instructions before doing so. He will probably, also, be governed by the agreement between the advisory council from the S. C. Medical Association and the State relief Administration, as to fees and practices, but if such agreement, now in course of discussion, should not be suitable to local conditions in the judgment of either the local relief administration or the Medical Society, it is subject to change by agreement.

It is planned that the State-wide program shall be established by agreement to be reached between the S. C. Medical Association and the State relief administration. When such agreement shall have been reached it will be transmitted to each Councillor of the S. C. Medical Association, who will be delegated to arrange for it to put in force by agreement between each County Medical Society and County relief administration.

Each County Medical Society will be expected to delegate a medical advisory committee of its members to deal and advise with the local relief administration in carrying out the relief program as it applies to medical service.

We are informed that the fee schedule submitted to the State relief administration is as follows: For each office visit, 75 cents; for each residence call \$1.25, with an additional 10 cents per mile for each mile of travel after the first two; for obstetrical patients \$10 delivery fee, with 3 prenatal and 3 post-delivery visits at visiting fees allowable; for surgical procedures from \$3 to \$25, with a maximum of \$3 for intravenous injections. The Committee recommends:

1. That the Medical Society decide whether it will support the program of medical care to be provided in the home to recipients of unemployment relief, as printed on Page No. 1026 of the Journal of the American Medical Association of September 23, 1933, and if so:

2. That the Medical Society accept the fee schedule for this practise now contemplated by the S. C. Medical Association, or such fee schedule as it may see fit.

3. That the Medical Society arrange a list of its members who agree to accept such practise at the agreed fee schedule.

4. That the Medical Society delegate from its members an Advisory Council to deal and advise with the local relief administration, and that this council be instructed to inform the local relief administration of the action of the Society, and

empowered to cooperate with this administration in carrying out the policy and provisions contained in the regulations herein referred to, and as agreed to by the Medical Society.

T. Hutson Martin,

B. Kater McInnes

Kenneth M. Lynch, Chairman.

Dr. W. H. Prioleau moved that the report be adopted. This was seconded by Dr. I. R. Wilson, Jr. The motion was discussed by Doctors J. J. Ravenel, F. R. Price, Waring and I. R. Wilson. The Secretary proposed the following substitute motion, which was accepted by Dr. Prioleau: "Moved, 1st: that the report be received as information and spread on the minutes; 2nd: that the Committee's recommendation contained in Paragraph 4 be adopted; (This paragraph reads as follows:

That the Medical Society delegate from its members an Advisory Council to deal and advise with the local relief administration, and that this council be instructed to inform the local relief administration of the action of the Society, and empowered to cooperate with this administration in carrying out the policy and provisions contained in the regulations herein referred to, and as agreed to by the Medical Society.)

3rd: That the Advisory Council herein appointed be empowered to act for and in the name of the Society." This was seconded by Dr. Robert Wilson, discussed by Doctors Rutledge, Price, I. R. Wilson, Cannon, Boette and Ravenel, and carried by unanimous vote.

The Secretary stated that the Chairman of the Board of Commissioners requested that he report to the Society that at a meeting of the Board that afternoon the matter of receiving the unemployed sick at a reduced rate was considered, and that the following motion had been adopted by the Board:

MOVED that it is the sense of this meeting of the Board of Commissioners that the Hospital receive remuneration for the treatment of the unemployed sick, and the Board is willing to make a special set rate for their care, provided that they are selected as being in actual need of hospital treatment; and that the rate be not less than \$1.00 per day. That the Medical Society be requested to place a member of the Board of Commissioners on the Committee which shall be appointed to confer with the local Board on Unemployment relief, and that such member shall be authorized to act for the Board.

The President appointed the following as members of the Advisory Council, in compliance with the resolution adopted: Dr. A. J. Buist, Dr. K. M. Lynch, Dr. O. B. Chamberlain, Dr. T. E. Bowers, and Dr. G. P. Richards.

The Scientific Program was called at 9:30 P.M.

The President presented Dr. H. C. Buchmeister, of Boston, as a visitor to the Society.

Dr. P. W. Sanders exhibited a series of patients

that had been successfully treated for granulomas by the use of fuardim.

Dr. R. B. Gantt read a paper on urethral obstruction.

Dr. J. J. Ravenel read a paper on hydronephrosis, and exhibited lantern slides.

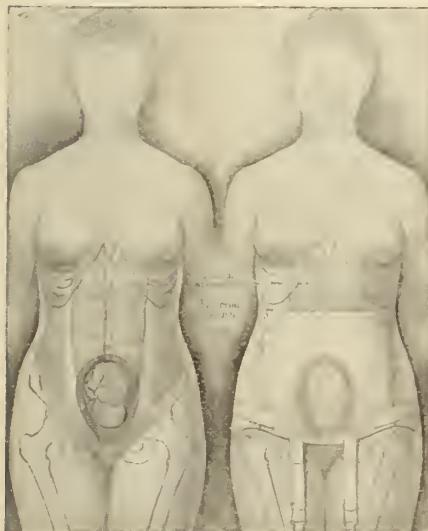
The papers in the Symposium were discussed by

Doctors Buchmeister, Ravenel, and Sughrue, Doctors Sanders and Gantt closing.

There being no further business, the meeting adjourned.

W. Atmar Smith, M.D.,  
Secretary.

## ANATOMICAL STUDIES FOR THE PRACTITIONER



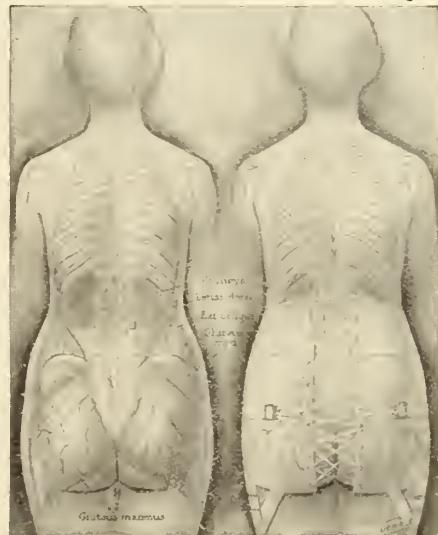
Anterior view in five months' pregnancy showing relation of fetus to bones and superficial muscles of abdomen. Figure at right illustrates influence of supporting garment on structures.

### *as Related to PREGNANCY*

A set of Anatomical Studies in book form is furnished to physicians on request—upon receipt of 20c to cover mailing costs.

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M.D., Assistant Editor, Rochester, Minnesota.

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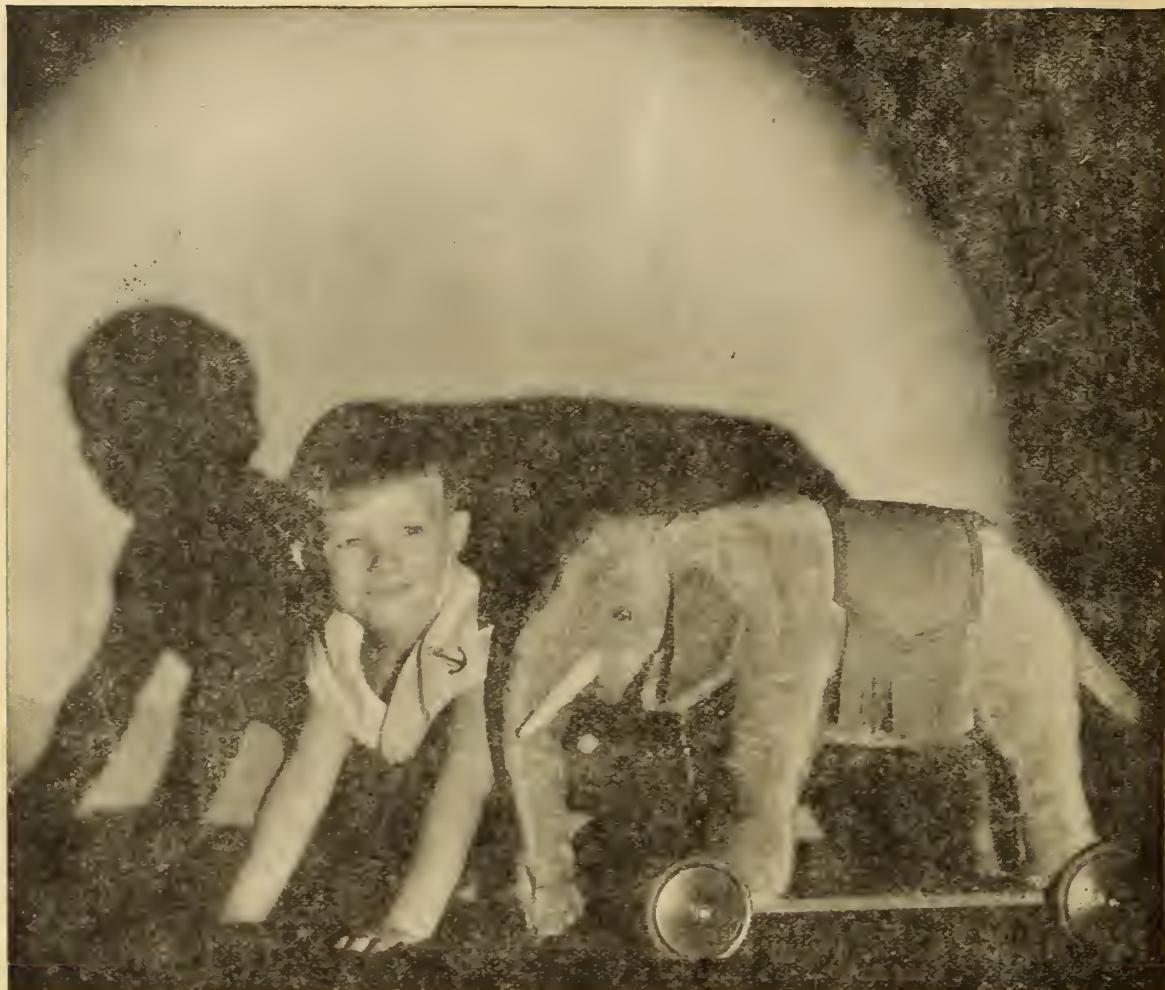
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